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W. H. DAVIDSON.

AN ILLINOIS PIONEER AND HIS ASSOCIATES.

VIRGINIA has been called "the mother of States and statesmen"; and Illinois affords an apt illustration of this title. Virginia is the mother not only of the State, but of many of the ablest and most influential of its statesmen, the Old Dominion having crowned her territorial gift with the dower of intellect and character.

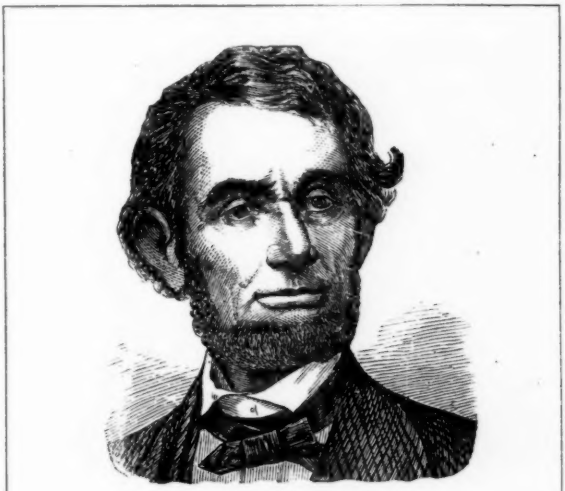
Among the foremost of those who make up this endowment stands Colonel William Henry Davidson. He was born near the banks of the Antietam, September 8, 1805, and was of Scotch-German ancestry, having descended in the paternal line from the clan Davidson of Scotland, and in the maternal line from the German—a compound lineage of which his

character exhibited marked traces in its steadfastness, blended with courage, sagacity, and energy. Bereft of his parents at a tender age, he was reared by a half-brother, Daniel Burkhart, late President of the Berkeley Bank at Martinsburg, West Virginia. This brother, Col. Davidson often said, was father, brother, and all to him, a cherishing care which he repaid by deep and abiding affection. The lessons of conduct taught him by this brother were never forgotten, and had no unimportant part in shaping his life. One of these, which he was fond of recalling, is worth mentioning here. While yet a child, his brother one day gave him a small coin, saying: "William, remember this stands for labor, and what others have worked for, you ought not to spend without thinking. Now, when you go by a shop-window, and see cakes and candy that you can buy with your money, stop and think whether you can do without them, and, if you think you can, do not buy them." The caution would have meant little to the ordinary small boy, who would have rushed to a foregone conclusion with the slightest possible amount of thinking; but with this child the lesson, instead of going in at one ear and out at the other, lodged permanently between the two, insomuch that, armed with its talismanic power, he carried his coin intact for months, in the midst of thronging temptations to spend it. The self-control thus early and successfully exerted never forsook him. The child was father of the man.

Col. Davidson was educated at Dickinson College, Carlisle, Pa., and subsequently studied law under Chancellor Tucker, at Winchester, Va., having as his fellow-students there Charles James Faulkner, Henry A. Wise, and others who have been prominent in the politics of the country. On the 9th of May, 1828, he was married in Washington city to Letitia Hamilton King, at the home of her cousin, Col. Cross, afterward killed in the Mexican war. Mrs. Davidson was a descendant of Thomas Green, a nephew of Lord Baltimore's, and one of the Colonial Governors of Maryland. She was a woman of singular purity of character and unusual force of intellect. Descended from the Roman Catholic founders of Maryland, she adhered through life to the faith in which she was nurtured. Her maternal ancestors, the Hamiltons, were members of the army, while her paternal ancestors, the Kings, belonged to the navy, and both families were conspicuous for their services and position; yet, notwithstanding these rather pride-breeding antecedents, she was herself the flower of humility and gentleness. An elder sister, Isabella, it may be stated, was one of the founders of the Academy of the Visitation, at Kaskaskia, Ill., the first planted in the West, and of which, when transplanted to St. Louis, Mo., she became Mother Superior, serving in that office, so eminent was her fitness, as continuously as the rules of the Order permitted, until her death. At this institution in St. Louis, one of the first repute in our country, the only daughter of Col. Davidson was educated.

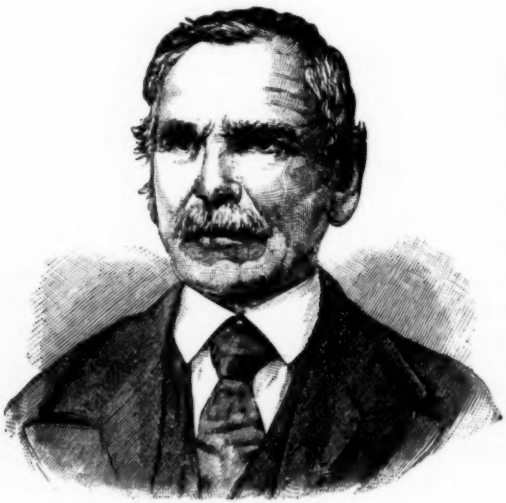
Soon after their marriage Col. Davidson and his bride started for Mobile, Alabama, it being his intention to enter upon the practice of law in that city, and make it his future home. Diverging from his route to visit his sister, wife of William Wilson, at Carmi, Illinois, he was persuaded to abandon the idea of settling in the South, and cast his lot with that of his kinsfolk in the West—a decision to which no doubt he was brought the more readily as his brother-in-law, just mentioned, afterward Chief-Justice of Illinois, was already in the full tide of successful practice at the bar. He accordingly pitched his tent at Carmi, situated on the banks of the Little Wabash, and then, as now, the capital of White County, but not then, as now, a large and flourishing town, connected by railway with the rest of the globe. At that time Carmi was a simple hamlet in the wilderness. Between the past and the present the contrast is sharp and distinct in the West as elsewhere. A journey from Washington city to Illinois was then attended with

more hazard and adventure than a trip abroad now. Canal-boats, broad-horns, and stages were the means of travel, and log-cabin inns, scattered far apart over vast tracts of desolate country, served the adventurous traveler with food and shelter. The red man did not stalk abroad with tomahawk and scalping-knife, it is true, yet in the virgin forests wild-cats and panthers still kept their predatory state, and not unfrequently a bear was killed within sound of habitations, and, what is more, his flesh was eaten, and relished as a delicacy. Deer and grouse were the game with which the settler might fill his larder, and the indigenous papaw and pecan trees presented their fruit and nuts fresh from nature's hands for the table. But there was one ubiquitous, hydra-headed enemy, which lurked unseen around the home of each hardy pioneer, playing sadder havoc with his interests than panther or bear. This was malaria, which, in some form, was ever the unbidden guest in the family. In the autumn and spring, it appeared as "chills and fever," in winter as "winter fever," and under Leo's blazing sun was known by a variety of other names, all significant of one head or another of the fell hydra which no Hercules has yet been found to destroy. Sallow faces and hollow eyes were the heritages of the brave men and women who left their homes of refinement and culture in the East for the perils and privations of the new West. But, thanks to their fortitude and enterprise, how changed is the scene now! The blank and cheerless prairies of those days are now golden fields, which stately cities variegate, like clouds "flecking the sunny air," pre-eminent among these being the Phœnix city, Chicago, founded little more than a generation ago, yet within that period shooting up twice into magnificence, first



ABRAHAM LINCOLN.

from the marshes of Lake Michigan, and then from its own ashes. To Illinois to-day her sons may "point with pride," in the best sense of that much-abused phrase. She contains upward of eight thousand miles of railroad, is rich in educational facilities and charitable institutions, abounds in wealth of all kinds, and does not owe a dollar. It was the men of whom mention has been made who not only designed her political fabric, and laid its corner-stones, but carried the superstructure far up toward its present completeness. Their fortunate successors had simply to work on their lines, and round out the embodiment of their conception.



JAMES SHIELDS.

Col. Davidson began the practice of law at Carmi, exhibiting from the first a remarkable vigor of intellect and determination of character. His sterling qualities and attractive manners soon brought him into the arena of politics, wherein he appeared as a Whig, becoming at once a leader, and retaining to the last the trust and admiration of his political associates, which, indeed, was shared in no small measure by his political adversaries. Before he had attained the constitutional age, he was elected to the State Senate, in which he served continuously for twelve years. At the session of 1836-7, in the second term of his service, he was chosen Speaker, although a majority of the members were Democrats, and a vacancy in the Lieutenant-Governorship imposed the duties of that office on the Speaker of the Senate. He thus became Acting Lieutenant-Governor, and filled the Gubernatorial chair for the unexpired term. His early ascendency in the councils of the State was the more noteworthy from the character of the men who then participated in them, all of whom were his superiors in age and experience, and most of whom were of the noblest type of manhood. Among them were Abraham Lincoln, Stephen A. Douglas, Orville H. Browning, Cyrus Edwards, James Shields, J. Gillespie, John T. Stewart, Wm. B. Ogden, E. B. Webb, and E. D. Taylor. To have been officially chief among such equals spoke eloquently for his own manhood as well as for his political abilities. In a recent letter to the daughter of Col. Davidson, Judge Gillespie, a notable member of this galaxy, says: "I knew your father well. When I first knew him he was in the Senate of Illinois. We were both Whigs, and his course commended itself to my highest consideration. Everybody regarded him as one of the most honorable and promising men in the State. I recollect his presiding over the Senate with distinguished ability. He was chosen by a Democratic body from among such men as Cyrus Edwards and Orville H. Browning. The Senate of Illinois was at that day composed of the very highest type of men." "Your father," Judge Gillespie adds, "was conspicuous for his fine personal appearance. He was a good

talker without the least display. In public he was sedate, but at his room he was

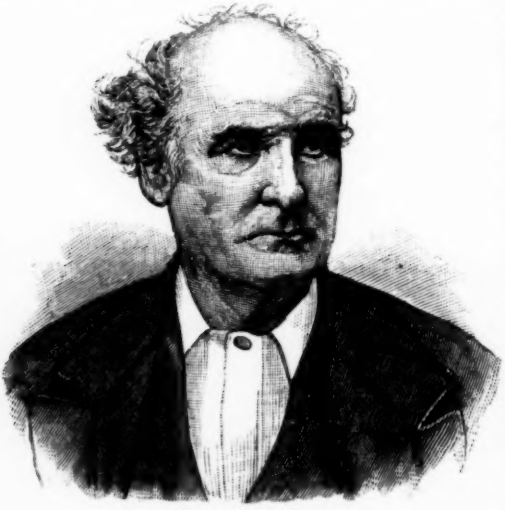
STEPHEN A. DOUGLAS.

remarkably sociable and entertaining. Mr. Lincoln admired him very much. He preserved better order when he presided over the deliberations of the Senate than any other Speaker I ever knew. He was a skilled parliamentarian, and his rectitude was above suspicion, and he was a man who could not be trifled with, and so his decisions inspired absolute respect and confidence. His name was very often used in connection with the office of Governor of the State, but Illinois being hopelessly against the Whig party, and your father indisposed to engage extensively in political life, I think he never ran for the place, although he was regarded as about the best timber we had. You may rest assured of one thing, and that is that there was not the slightest blemish upon the public or private character of Wm. H. Davidson. After he left Illinois, I kept track of him through my friend, the lamented Joshua F. Speed, who was a great admirer of your father. Mr. Speed, I will here say, was on more intimate terms with Mr. Lincoln than any other living man. They were almost like the Siamese twins." After having served twelve years in Illinois, Col. Davidson, influenced by the aversion which Judge Gillespie mentions, withdrew from political life, and devoted himself to commercial pursuits, for which he was admirably fitted, and in which, as in politics before, he achieved success. In 1851 he removed to Louisville, Ky., having bought out the well-known wholesale house of Fellows & Co., in which, however, he remained but a short time. Disposing of his interest in that establishment, he formed a copartnership with the late William B. Clifton in private banking, which he prosecuted for some years with his usual success. In 1858, on the organization of the Louisville branch of the Commercial Bank of Kentucky, he accepted, at the urgent solicitation of the stockholders, the cashiership of that institution, and with characteristic ability discharged the duties of that office until

JOSHUA F. SPEED.

his death. To Louisville, the second home of his adoption, he was greatly attached, interesting himself in whatever

concerned her welfare, and contributing liberally to everything that promised to advance it. He was one of the originators of the old Louisville Club, the first organized in the city, and noted for the manly spirit and social distinction of its members. Few men of honorable repute visited the Falls City, from abroad or near, without becoming the guest of this Club, which at that time was composed, among others, of such citizens as Judge Nicholas, A. D. Hunt, Gen. Wm. Preston, Dr. James Johnston, James Speed, Joshua F. Speed, Judge Bland Ballard, and



JUDGE J. GILLESPIE.

Grandison Spratt, the genial autocrat of the fraternity.

In social life, as in public, Col. Davidson was a leader, and his home, whether in Illinois or Kentucky, was the seat of a refined and generous hospitality. The last entertainment he gave in Louisville was a dinner to Senator Douglas, on the occasion of his visit to that city as a candidate for the Presidency in 1860. Among the guests were Gov. Crittenden, and his son, Gen. Thomas L. Crittenden, and a number of representative citizens of Louisville. Twenty odd years have passed, and of the noble men who sat around that board, all, host and guests have been gathered to their fathers, save Gen. Crittenden, and Mr. A. D. Hunt, for the latter of whom Col. Davidson cherished an especial affection. On the occasion of the visit referred to these two were appointed by a committee of citizens to receive Senator Douglas, and were the last to speed him on his way, not, as it proved, alas! to the White House, but to his tomb, in which he was laid a few months later.

Col. Davidson loved work, and his mind went straight to its conclusions. He was equally thorough and direct in his methods. No man better appreciated the maxim, that what is worth doing is worth doing well, or more faithfully carried it into practice. True to his Gaelic descent, he was a man of strong prejudices, but, true likewise to his German blood, he took large views, and patiently heard the other side. He sympathized with the best sentiments and inclined to close with the best thought of his time. Owning slaves in his youth, he yielded to scruples in the matter and emancipated them, although throughout life his associations, personal and political, were with the natural adversaries of the anti-slavery party. The doctrine of Secession he utterly rejected, believing it to be in conflict with the letter as well as the spirit of the Constitution, and, when the attempt was made to execute it, declared his adherence to the Union, in the face of very serious pecuniary losses. The salient features of his character were: a lofty sense of honor, unswerving fealty to duty, and a just appreciation of the rights and worth of others. Possessed of high and varied talents, he was successful in every field he entered—law, politics, mercantile life, and banking. Combining insight with foresight, his sagacity was un-

failing. In Rome in 1871, the Archbishop of Baltimore, then in attendance at the Ecumenical Council, said to Mr. Shipman, pointing to his wife (Col. D.'s only daughter): "That girl's father had one of the clearest, finest business heads I ever knew." And such was the general judgment. When the country was convulsed by the panic of 1857, he carried his bank safely through the commotion, and, while other institutions were falling or suspending around him, he stood a pillar of strength among the ruins, and helping his financial brethren. In his family his word was law, and, although he required the strictest obedience to rule, his children, domestics, and those of his household idolized him. His coachman, a colored man, became one of his nurses during his last illness, and, when all was over, it was pitiful to hear the man's lamentations, moaning between his sobs that his best friend was gone. To his children he emphasized the necessity of keeping their word, and exemplified the precept in his own conduct. A promise made by him was sacred, and his "Yes" or "No" carried its full meaning, and was never said hastily. His word was his bond. His judgment of men, as well as of affairs, was unusually fine, insomuch that his advice was habitually sought by his associates and friends. In matters of public moment he was often "the power behind the throne." He solved political enigmas, and cut Gordian knots, whereof the honor was appropriated by men of lesser caliber.

CHIEFTAIN OF THE CLAN DAVIDSON.

Col. Davidson's life was full and strong, and he enjoyed it highly, yet rationally.

His devotion to his friends was absolute, and among them, where he was best known —known by the crucial test of the dreary intercourse of daily life—was he most respected. To strangers, at the first blush, there appeared in him a certain *hauteur*, but it was in appearance only. A man of tenderer feelings, or of more delicate consideration for the feelings of others, never lived.

Around Carmi his sympathies lingered to the last. He had been reluctant to leave Carmi—the place to which he had taken his young bride, where he had received so much kindness and encouraging appreciation and had formed so many enduring friendships, which had crowned him with his first laurels, where all his children had been born, and where four of the seven had found their last resting-place. He frequently said that twenty of the happiest years of his life had been spent in Carmi. His home there was the center of some of the choicest spirits of the time. General Robinson, United States Senator; Chief-Justice Wilson, one of the ablest and most accomplished jurists of this country; the gallant and brilliant Baker, who fell at Ball's Bluff; Gov. Webb, a typical gentleman of the old school; his brother George, saturated with Attic salt; Dr. Shannon, Dr. Stewart, and others, representatives of the best blood of Virginia and Kentucky, and, far better, of the best qualities of human nature, were his neighbors and intimates. Lincoln and Douglas visited him often, occasionally staying for weeks at a time, while noted guests from afar tarried long under his rooftree. "Porte Crayon" (David H. Strother, at present Consul-General to Mexico) spent a winter there, diversifying his stay by placing on canvas the counterfeit presentments of his host, hostess, and their boy. Indeed Carmi was a bit of Attica planted in the Western wilds, and though never called, by itself or others, "The Athens of the West," it may be doubted if any of the various towns which arrogated to themselves this proud appellation had a better claim to it than the little Whig hamlet of "Egypt," as the wits of Whigism nicknamed the Democratic stronghold of Southern Illinois. Col. Davidson, after removing to Kentucky, was pressed by his friends, repeatedly, to re-enter public life, but he invariably declined. His political career in Illinois, on the whole, had been successful, and fraught with happy reminiscences. It was a pleasant venture (probably he thought it one of the follies) of his youth. He was now in mature manhood, with no ambition for political honors, with a strong distaste for political strife, and immersed in business at once congenial and prosperous. It cost him no effort, therefore, to turn his back upon the political arena forever, as he did. In the memorable Presidential contest of 1860, Col. Davidson supported Douglas. Nevertheless, Mr. Lincoln, after his inauguration, wrote to Col. D. offering him any office that he might think fit to name, proposing, himself, the Secretaryship of the Treasury. This generous offer he gratefully yet firmly declined. The offer itself illustrates the nobility of Lincoln. He, in fact, never forgot or forsook a friend. His whole life was a bright example of loyalty to friendship. Judge Gillespie, in the extract from his letter quoted above, mentions the intimate relations between Lincoln and Joshua F. Speed. The origin of the intimacy affords another illustration of this fine trait in Mr. Lincoln's character, and, as it is characteristic in other respects as well, may be given here. Mr. Speed began his business life as a merchant in Springfield, Illinois, where he was settled when Mr. Lincoln came there to open a law office. One day as he was sitting in his store in an interval of leisure, Mr. Lincoln, whose ingrained awkwardness was then aggravated by youth, came up to the counter, and accosted him with visible embarrassment. "I want to know, Speed," he said, "the cost of a bedstead and bed," adding a rough description, which indicated the cheapest kind of both. "What you want," answered Mr. Speed, "will cost you about seventeen dollars." At this Lincoln's jaw

dropped, and a painful expression of sadness and perplexity spread over his countenance. Mr. Speed, noticing the look, and rightly interpreting it to signify that the price exceeded Lincoln's means, quickly added: "Mr. Lincoln, I have a proposition to make you. My partner has just got married, and his bed in my room up-stairs is vacant. If you are willing to occupy it, and share my room with me, you are more than welcome." The painful expression instantly vanished from Lincoln's face, as, with a few simple words of thanks, he accepted the offer, and disappeared. In a short time he reappeared, with a pair of old-fashioned saddle-bags on his arm, and, directed by his new friend, shambled up-stairs to the designated room. A minute had scarcely passed, before he shambled down again, and as he reached the shop-room, cried out, his face beaming with jocund content, "Well, Speed, *I've moved.*" Henceforward unto death Lincoln and Speed were bosom friends.

Mr. Speed, and his brother-in-law and business partner, Mr. Henning, it should be said, became the executors of Col. Davidson, who directed in his will, as a special mark of esteem and confidence, that no bonds should be taken for the faithful execution of the trust.

In person Col. Davidson was strikingly handsome, with polished and distinguished manners. Dignified and at the same time cordial, he won the heart of every one with whom he associated. His mind was richly stored, and, when interested in a subject, his conversation grew eloquent. He was just six feet in height, weighing between 160 and 170 pounds, and with what is termed an iron constitution, although he died comparatively young. An oil portrait of him (by the celebrated artist Healy) represents a head of a fine pyriform type, with dark brown eyes, lofty brow, a chin firm yet delicate, and a mouth chiseled into the fairest bow shape. This last feature was one of peculiar beauty in outline and coloring, and his teeth, regular and white, were in perfect preservation at his death. But the chief charm of his countenance lay in its unusually sweet and captivating expression. Col. Davidson was nurtured in the religion of his Scottish ancestors, but, after reaching man's estate, belonged to no church. Faithful to his convictions of right and wrong, he sought through life no other guide. A little over two years before his death, he wrote from New York to his daughter: "Seventh of February, 1859, the anniversary of the birth of my only and darling daughter. Thanks be to God that this recurrence of it finds you not only alive, but in the possession of health, and surrounded by friends who love and cherish you. These are indeed blessings that we can not sufficiently appreciate. For them to our good God let your gratitude be manifested by an observance of His commands—His will. May each anniversary as it occurs find you drawing nearer and nearer to Him by practicing such a course of life and obedience as will finally, *when that one comes and you are not here*, commend you to His infinite mercy and blessing." Withal his respect for the beliefs of others was profound, and he steadily impressed upon his children the importance of attending the church of their mother, into the bosom of which, on his death-bed, he was himself received. The solemn rite was performed by his wife's cousin, Archbishop Spaulding, of Baltimore, who at that time was Bishop of Louisville. He died October 24, 1861. Death found him ready, and he met it with that holy peace which divests it of its terrors. His remains lie in the Catholic cemetery in Louisville, beside those of his devoted life-companion, and of his first-born son, Major Henry G. Davidson, who served with distinction in the Union army, and died at the close of the war, on the threshold of a civil career that promised to be brilliant. But two children survive, a daughter, who in 1868 was married to Paul R. Shipman, the associate of George D. Prentice in the editorship of the old Louisville *Journal*, and Charles Edgar Davidson, of Texas.

ALICE D. SHIPMAN.

THE TRAINING AND CHARACTER OF HORSES.

OF our domestic animals none occupy more attention than the horse, and although there is no subject with which general society is supposed to be more

Fig. 1.—Highest Type of Intelligence.

familiar, yet when it is a question of positive knowledge for a given purpose very few are able to meet the case—even among farmers and stock raisers we would scarcely find two who would agree entirely on the training or education of a horse having a certain trait or disposition. On the farm the treatment of this most useful companion of man is for the most part irregular, injudicious, and very often absolutely cruel; and the wonder is that the colt develops into a condition of docility, patience, and usefulness, which is rather typical than otherwise of the horse generally. With his highly organized brain, sensitive temperament, great strength, capabilities of resistance, the horse by appropriate training could be rendered much more efficient than he averages. This is shown by occasionally meeting with a noble specimen of the equine family which has fallen into considerate hands, and the capabilities of intelligence in such a case are astonishing, and the sarcastic remark which is often heard, "That horse knows more than his master," seems warranted. The deficiencies in horse training generally arise from a lack of understanding of the nature of the animal, and without such an understanding it is impossible to set on foot a system which shall be definite and efficient. Mr. Dennis Magner, whose reputation as a horse trainer is very extensive in this country, states that "There are three natural difficulties which present themselves in the outset of a horse's education. First, the horse is much stronger than man, and this fact the animal is intelligent enough to perceive very promptly; and if he can impose it to improper treatment he is likely to do it and thus resist the control of his master, and whatever gain there is on his part in such resistance, encourages him to further impatience of control, and finally he may become unmanageable and vicious.

"The second difficulty arises from his methods of reasoning, which must be intelligently exercised so as to prevent his becoming excited or frightened at boys and sounds with which he is brought in contact. Through his active senses of sight, hearing, and feeling he must be instructed with regard to their innocent character.

"Third, it must be appreciated that a horse can not understand the meaning of language or words of command, except so far as he is taught to associate them with actions; consequently, it is not to be expected that he will know what he is required to do unless taught and shown in a way that he can clearly

Fig. 2.—Vicious and Treacherous.

comprehend. We see, for example," says Mr. Magner, "that if a horse learn to pull away, break his halter, resist the blacksmith in shoeing, or run away, he

will be encouraged to do so afterward, and the habit may become fixed. On the other hand, when a colt is first haltered, no matter how hard he may resist, if compelled at length to submit, he will be likely not only to follow without restraint, but will continue to do so afterward; also when the feet are taken up and handled until an operation is quietly submitted to, or such restraint is brought upon the mouth as will overcome the power of resistance, he will not only submit for the time, but if the teaching be applied properly, inclination to resist afterward will be quite overcome."

The principle of this reasoning applies as well to other habits of the horse. Like all other animals of the herbivorous kind, he is naturally subject to the domination of man, and so susceptible to training; this subjection is illustrated in every type of horse, it does not matter how wild or vicious he may be, if his treatment be such as properly considers organization; in other words, is founded upon a thorough understanding of the horse nature. Having become once impressed by the superior power of his master through the element of fear, his fear overcome and supplemented by kind treatment he will not only exhibit submission without the use of force or restraint, but he will remain so if not abused or excited. The horse is ever subject to disturbance by the occurrence of unusual sounds, especially those

Fig. 3.—Willful and Spirited.

which arise from something in contact with his body and in this case a noise, especially if suddenly made, is likely to excite intense fear or resistance, and he will be likely to be afraid of it ever afterward. A new object should be brought

Fig. 4.—Docile, Kind, and Intelligent.

slowly and gently to a horse's notice; he should be permitted to smell and feel of it, then it can soon be placed on or around him without causing the least fear. It does not matter whether while in harness the cross-piece falls across the quarters, or an umbrella is raised behind or the whistle of a steam engine is heard, if the horse have been shown or introduced carefully to these things, he will not be seriously disturbed by them; whereas their sudden occurrence may be productive of most dangerous and persistent effects.

Third, in relation to teaching the meaning of the sounds or words of command, using the language of Mr. Magner, "it is evident that if a man were to sit on a block and simply read the word 'whoa'; to a horse, he might do it indefinitely without teaching him its meaning; but if a horse were moved, set in moderate action, and immediately after the command the reins were pulled sufficiently hard to make him stop, he would after a few repetitions of the command learn to stop and that without the reins being pulled. Or in teaching to 'back,' if after the command were given the reins were pulled upon sufficiently to force him backward, he would after a few repetitions learn to back freely of his own accord at

the word, to avoid the unpleasant effect of the pulling."

In further illustration of this principle,

Fig. 5.—Excitable and Obstinate.

Mr. Magner goes on to say how a horse may be taught a few tricks. If it is desired to teach a horse to make a bow, for instance, first prick him lightly on the back with a pin, and repeat this until in his efforts to avoid the annoyance he drops his head, then instantly stop the pricking and caress him; repeat the pricking until he has again dropped his head, then caress him and give him something of which he is fond; continue this method until at the instant the motion is made toward the back he will drop his head. To teach him to kick up, simply prick him on the rump until there is an inclination to kick up, when, as before, stop and caress him; so repeat until the least motion toward the rump leads to the effect desired. Teaching any kind of trick the principle is the same, the difference being only that instead of a pin other means suitable to the case must be used. To teach tricks by the word would be necessary to repeat the command and associate the act with it. Care should always be taken against confusing or exciting the animal, and but one trick at a time should be impressed upon him, the process being carefully and slowly repeated until no mistake is made. Of course, as horses differ much in intelligence, some will acquire their lessons more promptly than others, and more can be expected in the way of performance from some, to have prompt obedience at the word of command. Such an animal as the one in the illustrations (Fig. 1 or Fig. 4) can be readily taught to do unusual things. For the execution of any trick or movement the exact signal or word which it is customary to give in teaching it should always be repeated; the tone or pitch of the voice should be carefully regarded, otherwise the horse may mistake on the instant what is wanted of him, and consequently be unable to obey. Such an animal as that in Fig. 3 or Fig. 7 would test the patience of any trainer; bad habits, cunning, and vicious action are to be expected from such a physiognomy. But the defects of organization in such animals are usually increased by bad treatment.

The principle of kindness in training is potent in relation to a horse just as it is in relation to our influence upon our human brothers. If a man, for instance, were strong enough to take a bully by the shoulders and shake him so thoroughly as to show him that he had power to control him as he pleased, and then afterward treat him with kindness, the effect would be far better in establishing a relation of friendship and subservience on the part of the bully, than if the latter were merely impressed that he was kept under, or subjected by dint of the superior force of

Fig. 6.—Slow, Dull, Obtuse.

the other; in truth, it is not likely that the rough fellow would maintain a very pleasant feeling for his superior, if the contest

were carried on in the presence of others, so that his self-respect were affected, his low jealousy aroused. If a man could control a horse by putting his arms around his body, and thus prevent his struggling and becoming excited, and until the muscles were entirely relaxed, and then further win his confidence by kindness, caressing and so on, the subjugation obtained would be of the most efficient kind; but as there is not strength enough in human nature to do this, recourse must be had to such means as will approach as near in principle to it as possible. If the horse be given such freedom as to encourage his confidence in resisting, or if his willful, vicious nature be stimulated by ignorant, abusive treatment, and he should in his excitement and fury resist earnestly, despite of the most severe punishment, it is no more than should be expected and at the same time we would have a manifestation of the real cause to be overcome by our treatment. The manifestation proceeds from a condition of the brain just as mental phenomena in man arise, and this condition has been produced by erroneous treatment; and to secure the desired result of submission a method must be put in operation for the production of a different mental state; the fear of the animal must be checked and modified, and his confidence and good-nature gained. In the meantime strong physical means of control are legitimate as a temporary expedient, so as to secure that mental state which will lead to success. If he has been unduly stimulated by fear, then the horse should be shown that there is no cause for fear; if through certain qualities of viciousness, then those qualities should be modified through measures which shall calm and soothe the brain excitement which produces them. Kindness will accomplish much even with a stubborn, willful character like Fig. 3. We should always give a horse some credit for reason and allow him a little latitude as it were for reflection. Treating him much as a child whose disposition we understand, will have a similar effect.

The reader who is familiar with horses will recognize in the illustrations traits of horse physiognomy frequently met with. Fig. 1 shows the type of intelligence, high blood and docility; while Fig. 2 (from life) indicates the vicious and treacherous type, the animal against whom it is well to be wary. Fig. 3 is an animal that will tax the strength of his owner to keep in training. He is spirited, excitable, and "off the handle" often. Fig. 4 is a good fellow, docile, yet possessing spirit and intelligence—the horse for the family that will be kind to and appreciative of him. Fig. 5 requires a gentle, but strong hand. A "high-strung," nervous fellow is he—needing no whip or spur, but will "go" while he can stand. Fig. 5 is a very sensitive animal; flies and mosquitos annoy him greatly; his skin is thin and his blood

Fig. 7.—Very Excitable and Incorrigible.

hot. In Fig. 6 we have a specimen of the heavy, dull, stupid horse; the one that "any one can drive," but is rarely driven off a walk, or a very sluggish infrequent "lope." He's the horse to try the patience of a saint, when a little behind time for the train. Fig. 7 requires an exceptionally good driver to manage him; he must be watched or some dangerous trick of his may suddenly astonish his owner. He'll nab the unwary bystander on the shoulder, or perhaps seem disposed to make a brief luncheon of his hat. He has a wild-looking eye, and the head-lock falls in an unsteady corkscrew way down over his forehead, in itself suggestive of untrustworthiness. Compare Figs. 1 or 4 with Figs. 2, 5, 6, and 7, and see how wide the differences of character shown even by engravings.

EDITOR.

THE TRUE BASIS FOR THE SCIENCE OF MIND AND STUDY OF CHARACTER.

(Continued.)

SOME OF THE IMPORTANT TRUTHS OF PHRENOLOGY.

BEFORE proceeding to show the value of Phrenology as a means of analyzing types of character, it may be well to take a brief survey of some of the important truths which Phrenology has added to the science of mind. Especially do I think this necessary because, even here in this school of learning (Harvard College), we are wont to speak of many of the truths of the science of mind as if they were but lately discovered by modern scientists. It is always a disagreeable task to dispel pleasant illusions, but it is sometimes very necessary, when men become over-confident of the value of their own individual investigations. I will have something further to say upon the subject of appropriation of phrenological discoveries without acknowledgment, toward the conclusion of this essay.

The first principle which Gall and Spurzheim maintained, and which was bitterly opposed on all sides, was that the mind is dependent for its manifestation upon material organs, and that the brain was the principal seat of the mind. It is surprising to read, when we reflect how universally this fact is admitted at the present time, that Gall had to avail himself of every resource to prove his position, and brought to bear against his antagonists accumulations of facts both psychological, anatomical, and physiological, which completely established the phrenological view and annihilated those of his opponents. It does not fall within my province to give the proofs for the mind's connection with the brain, and it is hardly necessary, as nearly all scientists acknowledge this truth. They differ only in the method of the brain's manifestation of mind, whether the brain is composed of cells, and each cell is responsive to a particular shade of emotion or thought, and manifests that emotion or thought when excited by the proper stimuli; or that the brain, as a mass, moves its bulky weight every time to give rise to thought or emotion. Phrenology claims that there are two grand divisions of the brain mass, and that each hemisphere may act independently of the other or consentaneously together. This is only following the general analogy of the bodily constitution, for we have two eyes which may see objects independently or at the same time; so also with the organs of hearing. This truth is now admitted. The phrenologists affirm that there are distinct mental faculties, each having a cerebral organ in each of the hemispherical lobes. This truth has been debated with great rancor, but according to phrenological proof it is as truly demonstrated as is the truth of the mind's dependence upon the brain. It is further maintained that power of manifestation depends (*cæteris paribus*) upon the size of the hemispheres, and upon the size of each individual organ. Upon these principles a science of mind and character was built up which may be divided into divisions as follows: (1) A system of Psychology, having for its basis primitive or fundamental faculties, with a description of their nature, function, sphere of operation, and their relations to each other. (2) A system of Physiognomy, founded (*a*) upon the form of the skull, as determined by the size and form of the cerebral mass, or particular portions of it measured in radial distances from the medulla oblongata: (*b*) upon the natural language of the feelings and faculties as displayed in the actions, expressions, and attitudes of men. (3) A practical sociology, or the application of the system of psychology and physiognomy in connection with principles of cerebral physiology to the welfare of society and the ordinary business of life. The psychological part of Phrenology might be di-

vorced from the physiognomical and physiological and studied as a separate system, and it appears to have superior advantage over all other psychological systems. Let us see what it offers to science to-day.

(1) It has been determined by observation and reflection that there are distinct faculties, and that the brain is the organ of the mind, and has a seat for each individual faculty. I will not attempt to give the numerous phrenological proofs for this statement, but will content myself by showing, analogically, that it is quite possible that mind is manifested, not as a unit, but by a plurality of organs. In our investigation of animal life we have found a dependence of mind upon cerebral structure. Every year new facts are added to prove a plurality of cerebral organs. All animal life is a progress on the plane of

SPECIALIZATION OF FUNCTION

from the lowest to the highest, and has its culminating point in man; the more distinct and separate the organs through which the functions are performed, the higher and more intelligent is the animal. If we trace animals back to their lowest forms, we discover but little appearance of separate organs for special functions. The next grade probably reveals a stomach, or something resembling digestive organs. Then the next grade has special parts of the body devoted to special functions; for example, the breathing organs become distinct from the digestive, the eye from the ear, and the organs of voice from the organs of smell. In the highest animal, man, there is the greatest specialization of function. There is a distinct organ for everything—the eye, the ear, the sense of smell, are all distinct. The functions of the liver, the stomach, the heart, have all separate organs. Nay, it has been discovered that the nerves which ramify through the body and lie in bunches beside each other and are almost undistinguishable in form, have apparently the same texture and composition, yet perform different functions. In the same sheath, side by side with each other, are the nerves of motion and feeling. It is extremely absurd to conceive the brain, which is a collection of fibers, cells, and nervous ganglia in convolutions, acting as a unit, and moving its entire bulky mass every time a thought or emotion agitates it. This is a direct contradiction to all we know of the body in general. It would seem as if nature began on a line of harmonious differentiation of structure, which she carried through the whole body as far as the medulla oblongata and ended there, giving up the idea of differentiation after having tried it through all animals, from the oyster to man, as a bad business. Is it not more in accordance with her general plan to suppose that differentiation of structure is also characteristic of the encephalon? that feelings so distinct as anger, love, sense of causation, sense of mathematical relation, of colors, of space, of self-esteem, of construction, can all be performed by the brain mass acting as a unit?

In the light of modern science, then, Phrenology still can maintain her doctrine of plurality of organs, and every new fact added seems to support that conclusion. In the days of Gall and Spurzheim this analogical proof could not be so successfully used as at present, for there has been much information gathered from the investigation of the animal life which did not then exist; but, nevertheless, the early fathers accumulated a mass of evidence which proves conclusively the doctrine of the plurality of organs. It is my endeavor not to repeat old arguments in favor of Phrenology, but to view that science in the light of modern research, and to show that Phrenology has still strong claims upon us as a means of investigating the science of character; and, indeed, it holds a place in this department of knowledge which can not be filled by any other method of investigation. Since, therefore, it is not my aim merely to quote and apply arguments from phrenological works, but rather to give a series of original reflections upon the truths of Phrenology, I beg to

refer the reader to the works of Gall, Spurzheim, Combe, and the later phrenologists, for the solid array of facts which they have accumulated to prove their principles. The question has been agitated whether the phrenological terminology founded upon the classification of the mind is of value to-day. It would appear needless to discuss this question had not Bain and others attacked it, and endeavored to show that it was erroneous and faulty in many respects. Whatever defects there may be in the definition of the functions which the terminology conveys, nevertheless modern science has not given us a better terminology. When a modern philosopher shall arise and gain for his terminology such almost universal acceptance in current literature and popular language as the phrenologists have gained, he will be in a position to dispense with the phrenological terminology. As the case now stands, after years of carping criticism and systematic attack by the learned, men can find no better means of describing the various types of character than by the use of phrenological language.

Again: if we view Phrenology in the light of modern science, we find it has many other strong claims upon us. The exposition of the primitive powers of mankind which Phrenology has given, has made it a science of the utmost practical importance. Education which is not conducted upon its principles with reference to the various degrees of development of the primitive powers, can not be complete and satisfactory. Phrenology maintains that a harmonious development of all the powers should be the true aim of education. If, for instance, a person is found with any particular organ excessively developed, as, for example, a person in whom Destructiveness — the excessive manifestation of which is the desire to kill—is out of proportion to his other faculties, all the circumstances which are liable to excite that organ must be removed, and those organs which restrain the promptings of Destructiveness must be educated. So with all the faculties, the weak must be cultivated and the strong restrained, unless it is desired to make the person a specialist in the direction of the strong faculty. It is evident that any science which is able to point out the connate tendencies of men, will have a vast influence upon the education and legislation of men. If the various capabilities or innate capacities of men are thus unfolded, a sure foundation for the study of character is laid. This science of character will not culminate merely in a theoretical science, but like all other sciences which are founded upon physical facts, will lead to an art—namely, the art of reading the characters of men. This has actually been accomplished; yea, while the metaphysicians are still discussing the genetic powers of mind, or rather their boasted power, consciousness itself, through which they claim to have given a correct analysis of the mind, Phrenology, undaunted by the long discussions of alarmed opponents, has been slowly and surely perfecting the science of mind and character.

READING CHARACTER AS AN OBJECTION.

An objection has been made to Phrenology, even by the present professor of psychology in this university (Harvard), that Phrenology is not a science of the mind, but merely an art of reading character; but of all objections made against Phrenology this is the weakest. Is the science of medicine less of a science because it has given rise to the art and practice of medicine? Is geology less a science because from its principles practical geologists can survey tracts of country and draw geological maps and write reports? If that objection holds good against Phrenology, it applies with equal force against every science which has its principles so well defined that they can be put into practice, for an art is only applied science. This objection, instead of being an argument against Phrenology, is the crowning proof that its principles are derived from nature itself.* No vain

* It is only just to mention that the professor of psychology before whom this essay was read, since the

theory of the imagination has given birth to her mental delineations. In the crowded hall, in the street, on the platform, in schools and seminaries, in insane asylums, in prisons, on convict ships, in churches or in the theater, and among the most barbarous and civilized people of the world, its principles have been tried and failed not. Can any of her sister sciences—metaphysics and experimental philosophy—show an equal record? No, they have not yet accomplished a precise and complete analysis capable of unfolding a science of art and character. That Phrenology is an art is no objection, but her chief triumph, proving her principles to be as sure in their operation as the laws of nature. How, in the name of common sense, could the principles of classification and cerebral development be erroneous, if men can by their means pick out all the types of character, and analyze them so successfully that thousands will admit the correctness of their delineations? Phrenologists are not afraid of their science; they have always sought, nay, entreated, begged, and demanded investigation. The conduct of Gall, Spurzheim, Combe, Vimont, Caldwell, Elliottson, and the Fowlers proves this. They have selected prominent men, men whose characters were known to the public, and have appealed to them to witness the truth of their science; they have shown upon every occasion that the cerebral development corresponded to the mental manifestations. The heads of persons unknown to them have been given, whose characters they have successfully read. Any person is at liberty to decide for himself the truth of their propositions. It would be an easy matter to put Phrenology into the crucible and try it. Take any one of the many persons whose characters phrenologists have claimed to have analyzed, and show that the analysis is incorrect; this would do more to convince the public of the falsity of phrenological principles than all the long-winded discussions of the metaphysical, and the rash assertions of the experimental schools. But this has never been done, and I am convinced it never will be accomplished. For many years the science of mind and character, as revealed by Phrenology, has been before the public, and the learned have either ignored its claims by appeals to the mirthful tendencies of human nature, or have misquoted its teachings and principles.

THE INJUSTICE OF PREJUDICE.

The demand made by phrenologists that their science should be investigated according to the principles they have laid down, has never been complied with by the opponents of Phrenology. If they were complied with the opponents would become fewer and fewer, and finally disappear altogether, or begin to waste their strength and delay the progress of truth in some other department. I speak this as no mere rhetorical flourish, but from historical facts. It is a circumstance strongly in favor of Phrenology, that all those who have made a thorough investigation of its principles according to the natural rules laid down by phrenologists, have ended in belief in the science. To give names would only encumber unnecessarily this essay. If any one wishes to prove the truth or falsity of Phrenology, let him pursue the following method of investigation: (1) Clear your mind fully of all preconceived theoretical opinions originated by the self-introspective method as to the impossibility of founding a science after the manner of Phrenology. (2) Keep your mind freely open to receive truth, even if it is new and not recognized by the members of the conservative schools of thought who wear their professorship cowls within the walls of many of our universities because they have given, in their college career, good proof of their orthodoxy. (3) Remember

reading of the essay has explained that by his assertion that Phrenology was not a science, but merely an art of reading character, he did not mean an art in the real and true sense—as an art of medicine, etc.—but simply an art in its degraded sense, as applied to fortune-telling, astrology, etc. It would have been well if he had given this definition of art to his students in class assembled, as his words then conveyed a condemnation of Phrenology as an art in the true sense of the word.

that schools and colleges have not generally received new truth, but have oftentimes been the first to oppose it. (4) Remember, also, that principles which have long been taught may be false, even if professors of ability maintain them; in other words, authority is no criterion, truth must be decided in the crucible of mental conflict and experiment. (5) Do not hastily conclude that a whole science is false because one or more of its principles seem founded upon a wrong basis; this is often exemplified by the opponents of Phrenology; some are ready to consign the whole science to the region of forgetfulness, because they think they have found one or more errors in the system—as, for instance, you know the frontal sinuses, even if they are only an inch and a half or so wide, have the expansive power of rubber, and may cover the entire brain, so that it is utterly impossible to measure any organ when you can not measure one or two. That is, you know, Edinboro' and Boston are so intimately connected with each other, that the covering of a few houses in the first city by a drift of sand or snow would completely cover all Boston, and nobody could find their own house. (6) Never surrender truth, or your convictions of truth, through fear of not being on the side of your professor, and thus lose that delightful criterion of human scholarship, that adjustable gauge by which professors assure themselves of the brilliant lights of the school if not of the world—you know what I mean, those ominous things which make a man's heart tremble about examination time—Marks! Marks! It would be well, also, to bear in mind, in all your investigations, the following definition of a faculty: (1) A faculty is admitted as primitive (*a*) which exists in one animal and not in another; (*b*) which varies in the two sexes in the same species; (*c*) which is not proportionate to the other faculties of the same individual; (*d*) which does not manifest itself simultaneously with the other faculties; (*e*) which may act or rest singly; (*f*) which may be propagated distinctly to offspring; (*g*) which may singly preserve its proper state in health and disease. To the classes of this definition of a primitive faculty no objection can be made, says Professor Bain, and yet he will not follow such a method because too laborious. I will have occasion to discuss Professor Bain presently.

A BASIS LAID DOWN FOR THE STUDY OF CHARACTER.

In order to establish a science of character, we ought to study man as he presents himself to us. Observation, which is the foundation of all that is permanent in every science, is even of more importance in the science of character. Men differ so widely from each other in character and mental qualities, that it is impossible to build up a science of character from self-introspection unaided by observation. Yet self-introspection can do much more for the science of character than she has done in the past. If the philosophers of this school had made themselves the subject of the closest observation and introspection; if they had noted down their various actions, modes, feelings, and the conflicting passions which at times stirred their bosoms; if they had extended these observations and reflections into a period of years, not for a few moments only, not solely when in tranquil and thoughtful states of mind, but at all times, in calms and in passionate moods alike, a more satisfactory analysis of their own character would have been accomplished. Nevertheless, this would only be half of the science of mind and character, and would lack wide and definite proof; and, besides, since men differ in dispositions and mental qualities, in order to get a complete science of character men in every condition and of individual traits of character must be observed. After the facts were collected deductions could be made from them, and a correct analysis of mind and character obtained. This might be called the *psychological* part of the science of character, but still this process alone would not lead to a complete analysis of

numan character. If mind is connected with the brain and body, the seat of the fundamental powers which lead to the differences of character ought to be discovered. The size and quality of these organs (if any material organs are discovered) and the conditions of their activity should then be investigated. This would lead to organology, or the physiological side of man's character. This is by far the most important part of the subject. Physical facts, when once established, are not easily disproved. If the seat of a function has been ascertained, many opportunities are opened for watching its manifestations, for these can readily be noted from time to time, and their degrees of power and activity measured. The proof of an organ or of a fundamental power is then capable of thorough demonstration, for a certain function being always connected with a particular organ, the function infers the organ and the organ infers the function. It is because the metaphysical analysis of the human mind has no physical side that it is so unsatisfactory. Built upon mere speculation and connected with no particular part of our organization, the mind has been discussed and analyzed by metaphysicians as if it had already broken loose from its physical environment. The consequence has been, and will ever be, endless discussions concerning the very existence of primitive powers. Could the metaphysical thinker point to the seat of any one of the faculties he has analyzed, its existence could no longer be disputed. The question of innate and acquired powers could then be solved. But not having done this, they have resorted to such laws as the law of association, habit, attention, etc., to account for all the various dispositions of men.

What I have just said applies both to the old and new school of metaphysics. The modern only differs from the old school in the principle by which they evolve their conclusions. The old school sought to arrive at an analysis of the mind by desperate efforts to evolve fundamental powers from their own minds, and ignored entirely physical data; the new school simply differs in that they make physical data correspond to their own internal cogitations. Professor Bain belongs to the new school of psychologists, and his discourses on the human mind consist mainly of muscular association spread out as thin as molasses, by which he attempts to create such primitive powers as the perception of space, locality, size, etc. But laws can not create faculties—they are merely the explanation of how the faculties act. The laws themselves depend upon the faculties behind them. They depend for their very existence upon the very powers they attempt to create. The laws of association, habit, etc., give much information respecting the method by which the fundamental powers act, but although they may discipline such powers they can not create them.

The physical side of investigating the mind and character offers still other advantages. When we know the seat of an organ and its manifestations, we can predicate each in the absence of the other. Thus, for instance, when the lungs are largely developed we can predicate, all other things being equal, great breathing power, and so when the stomach is present we may confidently assert that the powers of digestion will be manifested. Should both these organs be absent, we can declare that breathing and digestion, according to animal processes, will not be manifested. So the phrenologist, having ascertained the physical seat of the various fundamental powers of the human mind, is enabled to predicate the functions of each. Thus, for instance, if it has been ascertained that the disposition to fight or defend oneself is connected with a physical organ for its manifestation, then when that organ is present we can confidently assert that the instinct of defense will form an element in the character of those possessing that organ. Thus Phrenology shows that in those animals which are pugnacious in the assertion of their rights, as, for instance, the cock, the organ of Combativeness is

largely developed; and in those animals which have no disposition to defend themselves by resistance, as, for instance, sheep, the organ of Combativeness is deficient. When a science is thus founded upon a physical basis, it always advances out of the misty regions of speculation into the clear light of demonstrated facts.

THE PHYSIOGNOMICAL RELATION.

In the study of character there is still another side to be considered, which may be called the physiognomical side. Men and animals express their feelings, passions, and thoughts in their faces and by bodily attitudes. These expressions become so fixed that the lines on the face announce what has been the ruling passions of an individual's life, as surely as the hands of a clock indicate the hours on the dial-plate. Behold the graceful curling lines on the cheeks above the mouth indicating the mirthful and happy character! On the other hand, behold the graceful lines are flattened and the cheeks drawn down in the morose and gloomy dyspeptic. No one would fail to tell by the look of a man, when he was angry, sad, or kind. All the various emotions, instincts, and passions have their language, which a practical observer can read as easily as the alphabet. The tones of the voice, the scowl, the sneer, the gestures of the head and body, reveal much of man's inner nature. A systematic study of this language of the passions should be made if a science of character is to be established. Where is the science of mind or character which has thus surveyed man from all these points of view? Not metaphysics, not psychology, not the experimental school, but Phrenology, contemptuously sneered at because she has so studied man. Her investigations have always been conducted on the broad principles of psychology, physiology, and physiognomy, and the result has been wonderful. It has led to a science of mind having a physical basis, and which, although not complete, has given an analysis of the genetic powers which no other science of the mind has accomplished.

I have not space to give in detail the phrenological analysis of mind and character, yet it seems necessary, before proceeding further in our inquiry respecting the bearing of Phrenology upon the analysis of types of character, to give a general outline of its classification.

Gall and Spurzheim arranged the faculties of the mind in two orders, corresponding to the feelings and intellectual powers of the metaphysician, named respectively the affective and intellectual faculties. The feelings were divided into two genera, the propensities and sentiments. A propensity is an internal impulse—in common language an instinct, which impels only to certain actions. A sentiment is an internal impulse, with an emotion superadded—in common language, an emotional instinct. The propensities and sentiments have various degrees of activity, from a simple elementary impulse to the most excited outburst of feeling, which is called passion.

The phrenologists also recognize the truth which the present psychological school asserts, that even the intellectual faculties are of the nature of instincts. Thus, to seek the causes of phenomena, or to compare and classify things, are the instinctive promptings of the intellectual faculties of Causality and Comparison. It seems to us that the phrenologists have here anticipated a great truth, which will in the end break down the hitherto rather sharp distinction made by psychologists between the intellectual and the other faculties of our nature. It has been their principle all along to ignore the testimony of the feelings and emotions as merely instincts, and, therefore, untrustworthy; but if the intellect is proven to be also instinctive, surely, then, the feelings and emotions are as trustworthy in their own sphere of action as the intellect.

The intellectual faculties are subdivided into perceptive and conceptive or reflective faculties. These are the grand divisions of the phrenological exposition of

the human mind, but each of these divisions has many individual faculties under them. I will now proceed to show, in a general way, the application of the phrenological analysis of mind to the study of character. I have said before that the metaphysical analysis of mind was inadequate to establish a science of character because of its one-sidedness. I will not, therefore, give arguments to prove this statement, as I have sufficiently discussed it in the first part of my essay. The phrenologists, by systematically studying man according to the principles which I have laid down in this essay, escaped the vague generalities of the metaphysical school. The phrenologists avoided the difficulty of separating clearly the genetic from adaptive powers, or fundamental powers from their combinations, by observing men of extreme development. Men of one idea, specialists in various departments, were observed, and the elements which made them such clearly ascertained. When the elementary faculties are once discovered the way is clear. Any intelligent person can combine the fundamental powers together, and estimate accurately their effects in combination. This analytic system can not lead to abuse if followed according to the method laid down by the founders of Phrenology. The unnecessary or too minute analysis which has crept into some works of late date on phrenological classification, seems to have arisen, not from methods of close observation, but rather from the imagination and the introspective method.

ANALYSIS THE BASIS OF PROGRESSIVE SCIENCE.

Analysis is characteristic of all sciences whose principles are subject to observation and experiment. In the childhood of all sciences men are satisfied with mere generalities, but as science progresses these generalities become more specific. Things formerly included under a certain class are shown to differ among themselves, so that two species may be formed from that which before was held to be but one. Analysis is the spirit of our age; not content with the classification of natural objects which the naked eye has given, men have surveyed the field of objects with the microscope, and microscopic analysis now forms an important part of every science. The chemist, by proceeding upon this principle, has analyzed into simpler elements many things before regarded as elementary. Everything general has now its subdivisions. The chemists can tell how various elements, when compounded, may either neutralize each other or increase their own qualities, or produce a third thing different from the elements. So the phrenologists, having pierced the veil of human action, having got beyond the compounds which make up human motives, and having discovered the elements upon which the compounds depend, have laid the basis for the science of character.

All the types of character are nothing more than the effect of the combination of the genetic powers. For example, a mean, grasping, sordid character like the miser, may be shown to have as its principal element an excessive and powerful activity of the organ of Acquisitiveness unrestrained by the moral and intellectual faculties. A science of character thus built upon the fundamental or genetic powers, is able to state the elements in every type of character, and to arrange all types under their respective classes. This is evident from the phrenological classification, which resolves man's constitution into three well-defined regions —animal, moral, and intellectual, with various subdivisions. It is my object to show that the true basis for the study of character has not been solved by the psychological or experimental schools of philosophy, but by the phrenological, because that school has endeavored, however imperfectly, to study man according to the plan which we have pointed out as the one capable of reaching satisfactory conclusions.

APPLICATIONS AND ILLUSTRATIONS.

First, then, the phrenologists divide the region of propensities into the *social* and *selfish* groups. The social group includes those propensities which prompt us to love home, friends, and country. All the types of character whose characteristics are those of sociability, may be shown to depend upon one or more of the propensities of the group. Thus those who love their home, wife, and all the pleasures of the family circle, are not only included in this class, but the very power which shapes the direction of their sociability can be pointed out. For example, large Philoprogenitiveness will lead a mother or father to manifest their sociability in the love and care of children. Or Conjugal Love will make the husband and wife to desire the companionship of each other more than that of others.

The second division of the propensities is the selfish group, whose normal function is self-preservation. Thus Alimentiveness in the normal state gives simply a desire and relish for food, and regulates its quantity, whereas in an abnormal condition it leads to gluttony and drinking; hence under this class may be included the glutton and drunkard, prominent types of character which prevail in civilized communities. As this division comprises such organs as Destructiveness, Combativeness, etc., we can class the pugilistic type under this head, also murderers, soldiers, and all those types of character which have traits of aggressiveness. Acquisitiveness and Secretiveness, although in their normal action are necessary to economy and prudence; in abnormal activity, when unrestrained by the higher faculties, they may produce a disposition to steal. Hence under this division are arranged all those persons whose leading traits of character are cunning, secrecy, and theft. In general the criminal class are those who have the propensities excessively developed, and the moral and intellectual faculties comparatively weak. They can be divided into types according to the fundamental powers or combinations of powers which shape their character.

Second. *The moral sentiments* are divided into two groups, the selfish and religious group. The selfish group comprises such faculties as Cautiousness, Love of Approbation, Self-esteem, and Firmness. Under this division there are many well-marked types of character. The coward or poltroon, the timid and irresolute, belong here. Here also belongs the egotist, a prominent character. Everybody has come across the man who esteems himself highly; who thinks everybody is wrong but himself; who lays down his commands with authority; whose fiat must be obeyed. Much of the manifestation of egotism depends upon the unbalanced activity of the organ of Self-esteem. The well-known type, whose chief trait is vanity, has its place here—those who glory in talking about themselves, who are ever striving for the praise of others. Women who are fond of dress and show, and who love flattery, come under this division. A normal development of love of approbation gives ambition and due respect for the opinions of others, but in abnormal activity leads to vanity. Under the influence of the organ of Firmness, which is one of this group, we have the well-defined types of character whose leading traits are stubbornness. Men of strong convictions and iron will; men who are not easily turned aside from the path they are treading; men who can be relied upon to stick to whatever cause they espouse, belong to this class. Firmness in its normal activity is an essential element in all truly magnanimous characters, but when unduly developed and not restrained by the higher faculties, leads to that unloving type of character which we call the mulish or ass type. All those men who are dogmatic, who adhere to opinions or measures in spite of reason or persuasion, belong to this class. When to large Firmness is added an abnormal development of the organ of Self-esteem, we have that most unlovely type of character, the dogmatic egotist. This type is

rather prevalent among the Anglo-Saxon race. Who has not had to suffer from some domineering, tyrannical, egotistical specimen of humanity!

It ought to be remembered, however, that all the fundamental powers have their appropriate sphere of action, and none of them are essentially bad, but good when in normal development and activity; it is only when abnormal that they give rise to these marked types.

The second division of the sentiments, viz., the *religious* group, which comprises such faculties as Conscientiousness, Hope, Marvelousness, Veneration, explain all the religious types of mankind. The devout Christian, the adoring worshiper, the religious enthusiast, the troublesome ritualist and spiritualist, have their place under this division. Moralists, divines, philanthropists, and all sympathetic and adoring types, depend upon one or more of the organs found in this group.

The *semi-intellectual* group now demands attention. This group consists of such faculties as Constructiveness, Ideality, Sublimity, Imitation, Mirthfulness, etc. This class embraces the mechanician, the artist, the orator, the poet, the sculptor, etc. But it must be recollected that more than one organ is necessary to form these types. Thus, for instance, while the orator requires sublimity, ideality, imitation, and wit, which are organs belonging to this division, he also requires faculties which belong to the other division I have described. In speaking of types of character, it would be necessary to give, first, the classification of mind, and then to take up each type in detail, and show just exactly what are the elements which form that type of character, but this would require more space than is permitted me. I must, therefore, be brief, at the expense of being misunderstood. I think that a better classification, derived from the phrenological system, could be made bearing especially upon types of character, as a separate and a very important subject. I hope to see this point more fully developed by the phrenologists. It is not that the elements of the human mind, as set forth by the phrenological system, are erroneous, or that their meanings shade into one another and thus produce cross-division, as Bain and others have asserted, but that while one classification or arrangement is philosophically necessary in the exposition of the human mind, another arrangement of the elementary powers is necessary when we come to apply the phrenological classification to explain types of character.

The *intellectual* faculties also lead to marked types of character. This group of faculties consists of Individuality, Form, Size, Weight, Color, Order, Calculation, Tune, Time, Eventuality, Language, etc. It may be shown that according to the development and activity of one or more of these faculties men have a tendency toward certain professions. Thus, for instance, calculation was the ruling passion of Bidder, the wonderful calculator; a passion for colors was a leading trait in the character of Benjamin West, the celebrated painter. Explorers, navigators, and geographers have good development of the perceptive faculties, especially Locality. So Tune and Time will explain the genius for music which some possess. The literary class must have good endowments of the intellectual faculties, especially Language. We may explain such types of character as the loquacious talker, the prattler, the eternal gabbler, who seems to have an inexhaustible supply of words, by showing that a large development of the organ of Language, pure and simple, is its basis.

The philosophic type has its basis in the reflective organs, with such as Comparison and Causality largely developed.

It would be a long story to show in detail how admirably the phrenological analysis of mind can be applied to the exposition of character; but in all that has been said, it ought to be remembered that when we speak of one faculty as forming a type of character, we do not mean that all the other faculties are absent in that type, but we mean that the faculty spoken of so predominates

over all the others, that it shapes the character and forms a special type. There are also types of character which are the result, not of one elementary power, but of a combination of powers.

In the treatment of types of character, I have attempted to condense a very large subject into a small compass, and the result is not as satisfactory as one might wish, but it is hoped that sufficient has been here stated to show that the phrenological system can be employed to advantage in analyzing types of character.

THOMAS A. HYDE.

Cambridge, Mass.

THE PARLIAMENT OF THE FACULTIES.

IN a lecture delivered before the National Arbitration League of Washington, D. C., by M. Cora Bland, M.D., the following pertinent illustrations were introduced:

"I take it for granted that no one will dispute the primary propositions of that branch of physiological science known as phrenology. That the brain is the organ of the mind; and that it is a compound organ; and that size, other things being equal, is a measure of power in a brain as well as in a muscle; and that the shape of the brain is an indication of the character of a brute or of a man.

"These propositions admitted, we have a scientific key by which to explain the causes of war, and why some brutes and some men are more savage than others. We have also a scientific basis upon which to act in our efforts to lift our race above the brutal and savage plain into the realm where reason, not passion, rules.

"The brain is sovereign; the body subject to its control. The brain conceives plans; the body executes them. We are told, and we believe, that man is created in the image of God; that is, he possesses all the attributes of his Creator in embryo. In the same connection we are informed that God consulted with Himself in regard to the making of man.

"Some theologians have concluded that this sentence is explainable only on the hypothesis that Deity consists of two or more persons. Be that as it may, the mental philosopher knows that no wise man ever engages in any enterprise or undertakes any work without first discussing the subject with himself. If it be a matter of great importance the discussion is continued for days, weeks, or perhaps years, before a decision is reached. This debate is carried on in the cranium, and the parties to it are the forty or more distinct mental faculties of the man.

"Did it never occur to you that the body politic is in the image of the body corporeal; that any number of men, organized into a political body, a government, think precisely and act precisely as one man would think and act under the same circumstances if that one man was a true representative of the political body of which he was a part?

"To illustrate: Suppose, instead of electing five hundred men to Congress to make laws for this nation, we elected but one, giving him the power now held by the Senate and House, and holding him responsible for his acts precisely as we do the members of Congress; that is, let him understand that his re-election and continuance in office depended upon his formulating into laws the will of the majority of the people of the nation—would not this man organize the faculties of his mind into a deliberative body much after the fashion of a congress or a parliament?

"Let us suppose a case.

"There are two political parties dividing the people almost equally. These parties put forward each a candidate, an election is held, and one receives a few more votes than the other and is declared elected. This law-maker goes to the capital and enters upon his work. If he is a wise and honest statesman he asks: What kind of laws do the people need? What

will make them prosperous and happy as a whole?

"Conscientiousness rises in his place and anwers the question: Just laws, laws that shall put the people upon a perfect equality with each other; laws that will promote peace, suggests caution; and prosperity, says acquisitiveness; and intelligence, says causality; and art, says ideality; and invention, says constructiveness; and religion, says veneration, etc., etc.

"'Mr. Speaker,' says secretiveness, 'I beg leave to suggest that we be very discreet, both in our expressions of opinions and in the laws which we shall ordain, and especially in regard to our foreign relations.'

"'I differ from my colleague secretiveness,' says combativeness; 'I believe in a bold and aggressive policy toward our neighbors.' Approbativeness applauds this speech, and destructiveness says, 'I agree with my colleagues, combativeness and approbativeness, the nation should be at once put upon a solid war footing by increasing the army and navy, and by making liberal appropriations to sustain those important departments of the government. It is a burning shame, sir, that this proud nation should exhibit to the world the spectacle of a little army of only 20,000 men, rank and file, and a navy that scarce deserves the name.'

"Cautiousness, rising, says: 'I beg leave to ask my pugnacious friend if he apprehends immediate danger of war, domestic or foreign?'

"'That has nothing to do with it; my policy is based on the motto of all prudent nations: in time of peace prepare for war,' responds destructiveness.

"'Would it not be wiser to provide for the perpetuation of the reign of peace by disbanding our army, converting our men-of-war into merchant ships, and promoting literature, science, industry, commerce, and morality?'

"'Mere sentimental twaddle. War is the natural condition of society; the profession of arms the noblest and most useful, hence the most honorable of all professions.'

"'I rise to suggest,' says causality, 'that it is unworthy of a legislative body to indulge in panegyrics or *ad captandum* rhetoric; nor can we afford to be governed by our fears or our vanity. The suggestion of cautiousness is a good suggestion; I therefore move that the house go into committee of the whole on the state of the Union, for the discussion of the general subject of maintaining peaceful relations with all other nations, and promoting prosperity, education, and honesty among our own people.'

"Motion carried; the intellectual and moral faculties voting for, and the selfish and most of the executive faculties against it.

"If the man thus clothed with supreme legislative power is a mere politician, he asks himself the question: 'What sort of a policy would prove popular with a majority of the people, and secure my re-election?'

"In *that* case his faculties *would* organize for debate and action under the dominating influence of the narrow policy of selfish ambition. Cautiousness would be made speaker, and secretiveness, combativeness, acquisitiveness, and other selfish faculties would preside over the various committees, while the intellectual powers would be subordinated, and the moral sentiments thrown into the position of a protesting third party, whose protests would be treated with contempt or ridicule, as were the protests of the old anti-slavery third party forty years ago."

TO A ROSE.

FROM THE GERMAN.

SILENT Nature, life inspiring,
Me and thee, sweet flowery queen,
In her womb eternal hiding,
Ever guardeth us unseen.

Little Rose, our beauty fadeth;
Storms shall wither thee and me:
But when the Eternal germ unfoldeth
We a brighter bloom will see.

LYDIA M. MILLARD.

POLITICAL ECONOMY.

A CRITICISM.

THE article by Mrs. Leonard under the above caption in the June Number of the PHRENOLOGICAL JOURNAL is one to awaken much thought. It is not my purpose to make a thorough review of it, but it seems to me to contain some errors as grave as those which Mrs. Leonard deplores.

The ease with which banks relieve the money market is by her spoken of as "of great benefit to the community"; but we should not forget that this power of expansion is accompanied by the dangerous one of contraction, and that the two enable the banks to manipulate the business of the country pretty much to their liking, which one who watches can see is done for their benefit far oftener than for the people's.

Again she says, "Many persons . . . . have supposed, because they saw that most of the things which have value were produced by labor, that labor was the cause of value."

Why does she say "*the* cause of value"?—as if value could have but one cause.

If to cause is to produce, labor does cause value. If I take a tree and by my labor make it into chairs, what has caused the value of the chairs above the tree if not my labor? It is true that some "value precedes labor," but it is equally true that labor supplements and increases value.

To my seeming it is not a very "erroneous notion that the land was the source of all wealth." If to the land we add the water and air, we certainly have the source of *all* material wealth, inasmuch as the food we eat, the clothes we wear, the houses we live in, and everything we use are derived from these sources; so it is often, and I think correctly, urged that there should be no monopoly of these.

Mrs. Leonard says, "There is no such thing as intrinsic value. There is nothing on earth of which the value does not change with time, place, or other circumstances." Strictly speaking, this is true, but as we commonly use the term intrinsic—thereby meaning real—it is not true. Evidently she has made the mistake of assuming that commercial value is all the value there is, while in fact there are real, legal and commercial values.

An apple or an orange and a glass of water have real value to which a commercial and greatly fluctuating value is often added. Money is *solely* a legal value, and, strictly speaking, can have neither commercial nor intrinsic value.

But the greatest error of all seems to me to be the reason assigned for the cheapening of our greenbacks during the civil war. "Owing to the large increase in quantity, and the fact that the area for its employment was narrowed by the withdrawal of the Southern States, the value of the money was cheapened, and more of it had to be given to obtain a given quantity of any material."

It should be borne in mind that the Southern States had withdrawn before the national currency was issued, so that fact had nothing to do with cheapening the money. In the other statement cause is put for effect. It was the cheapening that increased the money, not the increase that cheapened it. That was the work of shrewd men who had gold to sell, and were wicked and unpatriotic enough to take advantage of their country's needs and perils to sell it. But how did they accomplish this? Look on the back of the greenback and see: "This note is a legal tender for all dues *except* duties on imports and interest on the public debt." It was that exception that cheapened the money, and compelled a great increase of it to enable the Government to meet its dues. That this would be the effect of shutting one kind of money out of two great avenues where another kind might enter, seems to me

quite apparent; and is proven beyond controversy by the fact that the sixty millions in treasury notes, the first issue of Government money, a *legal tender* for *all dues*, never fell below gold, but were always at par with it, when not at a premium on account of their superior convenience.

I must express my satisfaction with the opinion that "no one can afford to be ignorant of the principles of Economic Science," and trust the time will come when all branches of political economy will be taught to our children in schools, as far as they can understand them. Leave out the study of geography, which is almost always learned at so early an age as to be forgotten before it can be of any practical value, and put in its place something with principles, and even if the facts connected therewith be forgotten, the principle once mastered will always belong to the one mastering it.

CELIA B. WHITEHEAD.

THE KEPPLES HEAD.

"THEY were all born captains," said Uncle Hal Webster, "and when you come to think of it that is a great misfortune. There is not a lieutenant in the whole nine of them, and, naturally, their father being dead, poor Mrs. Kepples has a time of it keeping harmony in the house. Why, don't you see? you'd know by the shape of their heads that they would be selfish, disobedient, and tyrannical. Self-esteem looms up on the head of every Kepples, so that if you know anything about phrenology you can't help being struck by it."

Very few of the people in the little country village did know anything of the "youngest of the sciences," but they believed in Uncle Hal, the village blacksmith and oracle, who was one of those men to be found in nearly every New England country town, having a smattering at least of nearly everything in their range of thought, reading, and contact.

The phrenological development of the Kepples head would doubtless have been forgotten had not Uncle Hal's quaint assertion kept it in mind. And "They were all born captains" became a part of the neighborhood tradition of the Kepples, this being a perpetuity that no family can hope to escape in the vicinity of their birth.

As the nine children grew up they had very few friends, and wherever they went they were, with one exception, generally disliked, but their neighbors used to say: "They can't help making themselves disagreeable, poor things,—they were made so."

They all started in the world for themselves, as school teachers, before they were fitted to teach, depending upon their unlimited self-esteem to fill all deficiencies in the "three R's." They were more properly disciplinarians than teachers. Much to their surprise their efforts were not appreciated, and two of the boys found their proper spheres as hotel clerks, the third finding congenial employment in attending refractory patients in a State institution for the insane. The girls were married one by one, and as news of their domestic infelicities floated back to the pretty hamlet near the sea, the old neighbors used to say:

"They were all born captains, and if they have not been promoted they have held their own at least." They used to speak, too, of the Kepples head, and note that the organ of Self-esteem, so conspicuous in youth, retained its prominence in maturity.

One of the girls when quite young went to the far West with relatives, married there, and did not return East until a sturdy boy and a dainty rosebud of a daughter accompanied her. What was the surprise of everybody to find this young woman sweet, lady-like, cordial, and gracious to all.

"I can't believe that it is Kate Kepples," said Uncle Hal Webster. "She used

to be the very worst of the lot. Don't you remember how she used to 'scratch,' and pull hair at school? It's a mystery and I intend to fathom it." So the next time the agreeable woman, with her two children, stood at the door of the smithy looking in at the glowing forge, the old man said in his cheery, outspoken way:

"You carried a Kepples head away with you, but you have not brought it back, I see. How does it happen? I should be glad to know."

"The self-esteem is there," replied the young woman, with a kindly smile, "but I very soon found in my Western home that if I was born 'captain,' as the school children here used to say I was, it was not necessary for me to remain so for life. I therefore resigned my position and set about cultivating other and more agreeable traits and tastes. I was so happy as to have for my first teacher in the West a lady who proved herself a real friend; she talked to me gently and kindly of my faults; and being, as I think every teacher should be, a believer in phrenology as well as a *student* of the science, she examined my head and conscientiously explained to me the defects in my character. I was converted soon after, and my endeavor to conform my will to that of Christian duty, made it easier for me to profit by the instructions of my aunt, my teachers, and afterward my husband. I was married early to a physician in a large and growing city. There has been always a great deal for me to do, and to occupy my mind. I have learned that one part of our mission in this world is to help others, and that, in so doing, we can overcome self and improve mentally, morally, and physically. My dear old teacher and my husband, who is also a phrenologist, tell me that some other organs have so developed that my head now hardly seems the same as the one that first fell beneath their truth-seeking fingers."

"Well, well!" said Uncle Hal, "so there is some good in phrenology for *folks*. I never 'sposed it was good for nothing but amusement, only for hosses. I can tell whether a hoss is going to kick my brains out or not the fust minute I put my eye on him, jest by the shape of its head."

"A great many people labor under the same misapprehension," replied the lady, "but if phrenological rules could be observed in the teaching, discipline, and guidance of children, there would be more fully developed characters; sin would be crushed, virtue would triumph, the love of the beautiful would be cultivated, and we should have the best instead of the worst of people. But that will not be until every physician is a phrenologist, and there is at least one teacher versed in the science in every public school. That time will come sooner or later, and when the good of which such a system is capable is set forth, people will advocate it who now, through ignorance, sneer at the idea."

MRS. ANNIE A. PRESTON.

WHIMS OF CELEBRATED MEN.

SOME amusing features from the lives of celebrated men have been brought together by a German writer. Auber wrote on horseback; it was not possible for him to write in any other place than in Paris, however beautiful another residence might be, and however many attractions it might offer. Adam composed best when he lay, with his clothes on, in bed, and showed as great antipathy to all landscapial beauty as love to his cats. The same antipathy to all natural beauty is charged to Donizetti, who always slept when he went upon a journey, when he should have given his attention to the romantic scenery of Switzerland and Italy. Eimarosa could not write without having a lot of friends around him, with whom he kept up an active conversation about art matters. Sacchini's train of thought was interrupted when his cats did not play their antics

upon his writing-desk. Sarti could only become inspired in a room without furniture, and which was dimly lighted. Spontini could only compose in the dark; and Meyerbeer composed best during violent thunder-storms, under the roof of his house. Salieri gained his inspiration while he walked quickly through the streets filled with a human throng, meantime eating a great quantity of confections. Haydn, in order to compose, sat in a soft arm-chair, with his gaze directed to heaven. Glück composed, in the open air, best in the glaring sunshine. He liked champagne by his work, and gesticulated very violently, as if he were an actor on the boards. Händel wandered in the churchyard, and when he wished to become inspired, he sat himself down in one corner of it which was shaded by weeping willows. Paesiello composed in bed, and did not leave it until he had finished a whole operatic scene or act. Mehul was a great worshiper of flowers, and often fell into silent reverie in observing them. He felt happiest in a quiet garden. Mozart gained his inspiration from reading Homer, Dante, Petrarch; Verdi must read passages from Shakespeare, Goethe, Schiller, Ossian, and Victor Hugo. Schiller inspired his muse by the smell of rotten apples, which he kept constantly in his desk; besides this, he liked to live amid surroundings corresponding to the subject upon which he worked. When he wrote the last act to "Mary Stuart" he had his servants clothed in black; and so long as he worked on "Wallenstein," he neglected no review or other military spectacle, and at home his wife must sing battle-pieces to him. Goethe loved to have plastic works of art before him as he wrote. It is known that in the creation of his Iphigenia, he had the image of an antique female before him, in order to see if that which he made his heroine say would suit the features before him. Jean Paul replenished his ideas while taking a walk, and drank a glass of beer now and then on the way. In writing he loved the strong smell of flowers. Herr von Kleist worked with great difficulty, and when he made poetry, it was as if he had a conflict with an invisible fiend. Just the opposite was the case with Father Wieland. In making his poems he trilled a lively song, and sometimes would spring away from his work and cut a caper in the air. Kotzebue, in the composing of his dramas, was also actor. He himself acted single scenes in his study. It is related that when Sand murdered him, his little son, as he saw him reel and then writhe upon the ground, cried to his mother, "See, mamma, father plays comedy again!" Bürger, the immortal poet of Leonore, is said to have whistled street songs as he wrote his verses on paper. His conversation in such moments is said to have been obscene. Hölderlin was often found crying when he composed poems. Similar things are said of the French romance writer Lafontaine. His wife once found him before his writing-desk swimming in tears. "Oh, it is too sad," he sighed. "It don't go at all," he sobbed; "I am still in the first volume." Matthison wrote his poems by moonlight, while standing at the window. Lamartine wrote his best things in the morning, before breakfast, while sitting before the fire. A contemporary of Dumas wrote thus: "The writing-desk of Alexander Dumas presents a picture of classical disorder. The study floor is covered with books and papers, behind which he is seated, formally barricaded. Also a quantity of dogs, cats, poultry, pigeons, singing birds are to be seen around, and these he feeds, strokes, and keeps out of mischief while writing. In the background stand a number of printer's devils waiting for copy, and booksellers and such people, who have business with him. He writes very rapidly, and carries on, very often, a conversation at the same time. He is very negligent in his dress."

SHOW me the man you honor. I know by that symptom better than any other, what kind of a man you yourself are. For you show me there what your ideal of manhood is, what kind of man you long inexpressibly to be.—*Carlyle.*

WOMEN'S RIGHTS.

THE Rev. Mr. W. McK. Darwood recently preached before a large congregation in the Bedford Street Methodist Episcopal church, New York, on women's rights. He emphasized the word "them" in his text: "Male and female created he them; and God blessed them and said unto them, subdue the earth and have dominion over every living thing." He said that the claim for the equality of the sexes was warranted, because God made them equal and gave them equal authority, conjointly, to have dominion. It is argued that the present relations of the sexes are natural. So Aristotle argued when he declared that the Greeks were of a free nature, while the barbarians of Thrace were of a slave nature. The same argument was used by the slave-owners of the South, when they called Heaven and earth to witness that the dominion of the white man over the black was natural. When the Almighty placed Adam and Eve in the Garden he put them both under the same restrictions. Each was made equally accountable for moral action; each punished because of transgression. They had no separate and independent rights and privileges.

In speaking of the education of women, Mr. Darwood said, that as God has endowed women with intellectual powers, it is their God-given right to acquire all the knowledge they can. Yet this is, in many directions, denied them, and he alluded to the petition that was presented in England not long ago, praying that women might not be taught the arts because it would interfere with men's pursuits in that line. A lady had applied to fourteen medical colleges in England for an opportunity to fit herself to earn her bread, and was refused admission by all; and the Pennsylvania Medical Society has directed its members not to recognize women graduates. He alluded also to the recent action of Columbia and Harvard Colleges. But, he continued, the sign "No admission to ladies" has been knocked off from many a college door, and almost the whole world is alive with the question of fair play to women in the matter of education. Our own country is making rapid strides in this direction. Already some of our leading universities have opened their doors to women, and Presidents White of Cornell, Leconte of California, and Warren of Boston, have declared that the presence of women students has improved the manners and morals of their institutions.

Another right claimed for women is that they shall receive as much pay for the same work as men get. Women clerks in Washington get $900 for doing the same work for which men are paid $1,800. Woman has the right, he continued, to say whether laws shall be enacted by which unprincipled men are authorized to change her loving father and husband into madmen and demons. She should have the right to say whether her property shall be taxed to keep up poorhouses and orphan asylums made necessary by the licensing of men to sell that which dethrones the reason and makes paupers and criminals. Governments derived their first powers from the consent of the governed, and taxation without representation has ever been considered tyranny. Sex is not a crime, and it is, therefore, degrading to deprive women of the right to vote and thus class them practically with robbers, murderers, and the worst criminals of the male sex.

THOUGHTS OF MOTHER.

EACH day brings its pleasures, each season new joys.
Transient all but a mother's warm love,
Who affection outpoured and on us implored
Benediction that comes from above.

The hours of our childhood made sacred by time,
And the dead now embalmed in our hearts;
I turn from its shades, from its hills and its glades,
As a pilgrim from Mecca departs.

We need not a Wordsworth to pen the sad truth
That a glory hath passed from the earth:—
Forever has passed, yet its memories last,
Ever sweet'ning life's turmoil and dearth.

SELECTED.

COMUS:

A MASK. — BY JOHN MILTON.

Presented at Ludlow Castle, 1634, before the Earl of Bridgewater, then President of Wales.

INTRODUCTORY.

This poem, although one of the earliest efforts of Milton's genius, possesses much of the dignity, sublimity, and characteristic learning evinced in his "Paradise Lost," which was the great effort of his riper years.

"Never," it is said by a distinguished critic in reviewing Comus, "were the loveliest graces of natural description more felicitously employed, or the union of what is beautiful in the moral and imaginative of poetry more complete."

In presenting it to the readers of the JOURNAL, we assume, not that so unique a piece is unknown, but that among the numerous productions of modern poetry, literature, and science which are, as it were, "to the manner born," it might not be either forgotten or neglected—or, at least, might still be kept in place before the attention of the new generation of readers, both on account of its literary merit and the excellent moral contained in its argument. Moreover, we deem it fitting, as showing how closely allied are the writings of these great masters to those underlying principles of human constitution and development which have ever maintained a large space in the thought which promotes the world's moral advancement.

Phrenology, being fundamentally related to human affairs, may be said to have always existed, although it has only within the past century taken position as a science. Its major principles are clearly deducible from great writers of former days who have made human character the subject of their contemplation, and who have shown deep knowledge of the human mind and its relation to moral and physical conduct. In this beautiful poem, by one of the greatest of poets, we can see how well it is illustrated by the spontaneous utterances and presentations of a mind dwelling almost in a supernal sphere, like the messenger who is introduced in the opening lines, and afterward fills an important part in the action of the piece.

THE PERSONS OR CHARACTERS.

The *attendant Spirit*, afterward in the habit of *Thyrsis*.	The *Lady*.
	First Brother.
Comus with his crew.	*Second Brother*.
	Sabrina, the Nymph.

THE FIRST SCENE DISCOVERS A WILD WOOD.

The attendant Spirit descends or enters.

Before the starry threshold of Jove's court
My mansion is, where those immortal shapes
Of bright aerial Spirits live insphered
In regions mild of calm and serene air,
Above the smoke and stir of this dim spot,

Which men call Earth, and with low-thoughted care
Confined, and pester'd in this pin-fold here,
Strive to keep up a frail and feverish being,
Unmindful of the crown that Virtue gives
After this mortal change to her true servants
Amongst the enthroned Gods on sainted seats.[1]
Yet some there be that by due steps aspire
To lay their just hands on that golden key
That opes the palace of Eternity:
To such my errand is: and but for such,
I would not soil these pure ambrosial weeds
With the rank vapors of this sin-worn mould.[2]
But to my task. Neptune, besides the sway
Of every salt flood, and each ebbing stream,
Took in by lot 'twixt high and nether Jove
Imperial rule of all the sea-girt isles,
That like to rich and various gems inlay
The unadorned bosom of the deep,
Which he to grace his tributary gods
By course commits to several government,[3]
And gives them leave to wear their sapphire crowns,
And wield their little tridents: but this isle,
The greatest and the best of all the main,
He quarters to his blue-hair'd deities;
And all this tract that fronts the falling sun
A noble peer of mickle trust and power
Has in his charge, with temper'd awe to guide
An old and haughty nation proud in arms:[4]
Where his fair offspring nursed in princely lore
Are coming to attend their father's state,
And new intrusted sceptre; but their way
Lies through the perplex'd paths of this drear wood,
The nodding horror of whose shady brows
Threats the forlorn and wand'ring passenger;
And here their tender age might suffer peril,
But that by quick command from sovereign Jove
I was dispatch'd for their defence and guard;
And listen why, for I will tell you now
What never yet was heard in tale or song,
From old or modern bard, in hall or bower.
Bacchus, that first from out the purple grape
Crush'd the sweet poison of mis-used wine,
After the Tuscan mariners transform'd,

[1] The opening of the poem presents that remarkable dignity, purity of thought, and grace of diction, afterward so eminently manifested in a still loftier manner, as due to the higher quality of the theme, in the opening lines of "Paradise Lost": "Before the starry threshold of Jove's court" (Milton has used the classic term Jove for Jehovah). The magnificent temple of the physical heavens may perhaps proximately typify the heaven of spirits—of bright aerial spirits.

The attendant Spirit—one of those immortal agents sent, we may say, "to minister to those who shall be heirs of salvation"—may not such an attendant be provided for every one, certainly all who strive for virtue, if for no other than to counteract the influences of evil?—descends, and in this opening speech declares his nature and mission.

Perhaps no higher conception of the habitations and employments of such beings can be expressed in general terms or in more beautiful human language—

"In regions mild of calm and serene air,
Above the smoke and stir of the dim spot which men call earth."

The principle of mental balance is here admirably and forcibly suggested. The "regions of calm and serene air" are but the reflected symbol of their inward mental state, the harmonious interaction of highly developed faculties.

[2] The spirit is sent to conduct a company through a wild beset with darkness and dangers. This is typical of the wilderness of the world. Milton believed that heavenly aid was always necessary, even to the best of men.

—"And but for such
I would not soil these pure ambrosial weeds
With the rank vapors of this sin-worn mould."

This seems to imply that even angels or spirits are not free from personal likes and dislikes; that effort and self-command are functions of their duty. They are not machines even of virtue.

[3] Power of administration in government is formed chiefly by the intellectual organs of Order, Causality, Calculation, Individuality, etc., with the association of the executive forces. In a well-endowed brain the higher grade of administration is shown through the influence of the sentiments in tempering severity, and exhibiting wisdom through a discreet magnanimity.

[4] This is a burst of patriotic fervor which is worthy of the grand mind that gave it utterance.

Coasting the Tyrrhene shore, as the winds listed,
On Circe's island fell : [5] (who knows not Circe
The daughter of the Sun ? whose charmèd cup
Whoever tasted, lost his upright shape,
And downward fell into a grovelling swine :) [6]
This nymph, that gazed upon his clust'ring locks,
With ivy berries wreath'd, and his blithe youth,
Had by him, ere he parted thence, a son
Much like his father, but his mother more
Whom therefore she brought up, and Comus named ;
Who ripe, and frolic of his full grown age,
Roving the Celtic and Iberian field,
At last betakes him to this ominous wood,
And in thick shelter of black shades imbower'd
Excels his mother at her mighty art,
Offering to every weary traveller
His orient liquor in a crystal glass,
To quench the drought of Phœbus, which as they taste
(For most do taste through fond intemp'rate thirst)
Soon as the potion works, their human count'nance,
Th' express resemblance of the gods, is changed
Into some brutish form of wolf, or bear,
Or ounce, or tiger, hog, or bearded goat,
All other parts remaining as they were ;
And they, so perfect in their misery,
Not once perceive their foul disfigurement,
But boast themselves more comely than before,
And all their friends and native home forget,
To roll with pleasure in a sensual sty.
Therefore when any favor'd of high Jove
Chances to pass through this advent'rous glade,
Swift as the sparkle of a glancing star

"Swift as the Sparkle of a Glancing Star."

I shoot from heav'n, to give him safe convoy,
As now I do : but first I must put off
These my sky robes spun out of Iris woof, [7]
And take the weeds and likeness of a swain,
That to the service of this house belongs,
Who, with his soft pipe, and smooth-dittied song,
Well knows to still the wild winds when they roar,
And hush the waving woods, nor of less faith,
And in this office of his mountain watch,

[5] *The Tuscan Mariners ;* they were transformed by Bacchus, whom they had angered, into ships and dolphins. See Ovid, Met. iii. 8. The story of Circe and her peculiar arts is well known.—*Homer, Odyss. x.*

[6] The charm of Circe's cup and its effects is a standard simile in the literature of temperance and social reform. Nothing better or more forcible has been found to express the tendencies of vicious indulgence than the classical legend. Milton employs it with nice appropriateness ; he has, however, kept the body or frame of the charmed subjects human, only the heads being changed into those of different animals. Yet, as the head contains the brain, the mind center, with all its organic functions, the charm has effective control over their whole being. All the powers, feelings, affections, aims, and aspirations become subordinated to the control of the agent of vice. Quite apposite is the allusion of the poet to the variable influence of wine in depraving the character, and converting what is beautiful in form and feature into ugliness and deformity.

[7] The spirits, like mortals, are not unendowed with the faculties or the exercise of them, of Secretiveness, Caution, etc., for the uses of deception or disguise, but only to good end.

Likeliest, and nearest to the present aid
Of this occasion. But I hear the tread
Of hateful steps. I must be viewless now.

Comus enters with a charming-rod in one hand, his glass in the other; with him a rout of monsters, headed like sundry sorts of wild beasts, but otherwise like men and women, their apparel glittering; they come in making a riotous and unruly noise, with torches in their hands.

Com. The star that bids the shepherd fold,[8]
Now the top of Heav'n doth hold,

COMUS WITH HIS ENCHANTED CREW.

And the gilded car of Day,
His glowing axle doth allay
In the steep Atlantic stream,
And the slope Sun his upward beam
Shoots against the dusky pole,
Pacing toward the other goal
Of his chamber in the East.

Meanwhile welcome Joy and Feast,
Midnight Shout and Revelry,
Tipsy Dance, and Jollity,
Braid your locks with rosy twine,
Dropping odors, dropping wine.
Rigor now is gone to bed,
And Advice with scrupulous head,
Strict Age and sour Severity
With their grave saws in slumber lie.
We that are of purer fire
Imitate the starry quire,
Who in their nightly watchful spheres,
Lead in swift round the months and years.
The sounds and seas, with all their finny drove,
Now to the moon in wavering morrice move;
And on the tawny sands and shelves
Trip the pert faeries and the dapper elves.
By dimpled brook and fountain brim,
The wood-nymphs deck'd with daisies trim,
Their merry wakes and pastimes keep:
What hath night to do with sleep?
Night hath better sweets to prove,
Venus now wakes, and wakens Love.
Come, let us our rites begin,
Tis only daylight that makes sin,
Which these dun shades will ne'er report.
Hail, Goddess of nocturnal sport,
Dark-veil'd Cotytto,[9] t' whom the secret flame
Of midnight torches burns; mysterious dame,
That ne'er art call'd, but when the dragon womb
Of Stygian darkness spets her thickest gloom,[10]

[8] Comus may be considered as the type of vice, clothed in all the elegance, polish, and attractiveness of which vice is capable of arraying itself—born of an enchantress, and the god whom classic legend invests with all the best qualities of alluring sensuality; all the graces and polish of life are his endowment—Vice is made alluring by its physical splendors and accomplishments.

[9] *Cotytto*; a Thracian divinity who was worshipped at Athens and Corinth with festivals chiefly notable for their licentious frivolities.

[10] See contrasts and confirmations in lines 221–2, 373–5, 381–5.

And makes one blot of all the air,
Stay thy cloudy ebon chair,
Wherein thou rid'st with Hecat', and befriend
Us thy vow'd priests, till utmost end
Of all thy dues be done, and none left out
Ere the blabbing eastern scout,
The nice Morn on the Indian steep
From her cabin'd loop-hole peep,
And to the tell-tale Sun descry
Our conceal'd solemnity.
Come, knit hands, and beat the ground
In a light fantastic round.

The Measure.

Break off, break off, I feel the different pace
Of some chaste footing near about this ground.
Run to your shrouds, within these brakes and trees;
Our number may affright: some virgin sure
(For so I can distinguish by mine art)
Benighted in these woods. Now to my charms,
And to my wily trains; I shall ere long
Be well stock'd with as fair a herd as grazed
About my mother Circe. Thus I hurl
My dazzling spells into the spungy air,
Of power to cheat the eye with blear illusion,[11]
And give it false presentments, lest the place
And my quaint habits breed astonishment,
And put the damsel to suspicious flight,
Which must not be, for that's against my course;
I under fair pretence of friendly ends,
And well-placed words of glozing courtesy
Baited with reasons not unplausible,
Wind me into the easy-hearted man,
And hug him into snares. When once her eye
Hath met the virtue of this magic dust,
I shall appear some harmless villager[12]
Whom thrift keeps up about his country gear.
But here she comes, I fairly step aside,
And hearken, if I may, her business here.

[11] It is the attractiveness of vice that needs the watchful protection of rigid principle. The specious statement of Comus in the lines alluded to, fraught with all the graces of rhetoric and symbolism, are but the flowers which cover the pit or the decorations of the snare. Fine endowments of intellect, esthetic taste, etc., as all know, may be possessed by those whose only exercise of them is for the gratification of propensities and corrupting appetites.

[12] Comus, as well as the Spirit, here exercises the organ of Secretiveness, but to a very different end. In the one case this organ of prudence and reticence is made helpful to the sentiments of kindness, affection, and philanthropy; in the other it is the instrument of selfishness and depravity, of a motive which would pervert and destroy every element of beauty and sweetness.

THE "KING OF BEASTS"—WHICH?

THE "BLUES"; THEIR CAUSE AND CURE.

IN writing of the "Blues," perhaps it would not be out of place to inquire into the origin of the term, which, although very useful and universally understood, can not as yet be recognized as fully incorporated into the language. Webster declares the word to be a contraction of "blue devils," a common expression for extreme dejection or melancholy. The supernatural part of the latter metaphor is too evident in its application to need any explanation; the epithet "blue" is frequently used to designate anything stern, forbidding, or somber, in accordance with the mysterious law of association which has supplied the entire vocabulary of psychological terms.

Having found out what the term blues or "blue devils" means we are prepared to investigate their causes. In the first place, the intimate reciprocal relations of the mind and body are too well known to call for anything further than mere reference; now we must bear in mind that the blues are a disease, hypochondriasis, to speak by the card. We are not talking about an occasional dampness of spirits such as is at intervals the lot of all, but a downright, chronic, habitually recurring despondency, the most unenviable of all ailments. This latter breeds pessimism and cynicism, fosters misanthropy, engenders gloom, welcomes despair, and, if allowed its own course, terminates in insanity and suicide. The word "if," however, covers more ground than any other in the language. When James A. Garfield had been shot through the spine he asked the doctor if there were any hope of recovery. The physician, willing to reassure him, replied that there was just one chance that he might live. His answer contained all of the noblest philosophy of human life: "Well, doctor," said the stricken President, "I'll take that chance."

To return to the question of causes: hypochondria is frequently the result of physical derangement, disregard of sanitary laws, or immoral and pernicious habits. A lack of tone and vigor, indisposition to exertion, can not long subsist without producing a corresponding effect upon the mind. Among women, the circulation of the blood is impeded by tight lacing, acting by direct constriction, and by permanently mal-forming and contracting the thoracic cavity, impeding the respiratory process, and thus preventing the complete oxygenation of the blood. The result of this is cold extremities and a hot head, partial paralysis of the sympathetic nerves (especially of the lower limbs) and general derangement of the vital functions. Dyspepsia is a prolific cause of the blues; in fact, nothing is more certain to produce irritability and despondency than indigestion. In this also, as in many other cases, the importance of inherited tendencies can not be overlooked. The

law by which taints of blood and disorders of the mind are transmitted from generation to generation must enlist the serious attention of every thoughtful person. An inherited predisposition, however, fortunately by no means points to a certain realization. If vigorously resisted, a few generations may effect its entire extirpation; but if, as is too often the case, this predisposition is fostered and encouraged, an unhappy culmination is soon to be expected. Now, either a natural or an acquired disposition to depression of spirits may be nourished in a thousand different ways. Nothing subsists without food, a disordered fancy not more than a being endowed with flesh and blood. Melancholy feeds upon solitary broodings. It seizes upon the man who is always looking inward upon himself instead of out upon the world, believing that mankind hates him, and knowing that he hates mankind, who has closed his heart to the manifold sufferings of humanity, and sits in gloomy and solitary meditation over his own wrongs. Let those who find a dismal satisfaction in Byronic musings consider that selfishness is the very kernel of this melancholy, for such monologues invariably contain a subtle element of self-flattery which imparts satisfaction to the vanity. The worst egotist is of the Uriah Heep type: always masquerading under a feigned humility. Beware of the man who is fond of calling himself a worm, a poor, miserable, forlorn, unworthy creature of the dust: in his heart of hearts he believes that he is the elect and salt of the earth, created a trifle higher than the angels.

Now, a word as to the best method of fighting the blues. When a country is invaded with hostile intent, the first thing is to find out the nature and location of the enemy, the next to declare war, call out the troops, and march against him. In the first place, then, you must realize that you have been invaded by the blues, and that they are laying waste your happiness, disregarding your rights and honor, and impairing your manhood; then you are to lose no time in commencing hostilities. If, now, you stay at home and bewail your sad condition, the blues will gather head with amazing rapidity. On the other hand, on the first show of determined resistance, the blues are such arrant cowards as to flee the country without risking an engagement. To drop the metaphor, in addition to the removal of its physical causes, the most essential and effectual agent for exterminating this pest is sturdy will-power. Abandon the idea that there is anything romantic about melancholy; outside of novels the dumps are the most stupid and uninteresting things imaginable. Attach yourself to some useful purpose, and labor diligently to that end; idleness is the food of morbid sentiment, and industry its bane. Indolence *is* dolorous, in spite of etymology. The blues attack an idle mind as worms prey upon an old hulk rotting at its moorings; they flourish in the darkness like foul vermin in slimy dungeons, or fungi in damp woods.

When you read your Bible, don't turn to Job and Lamentations, to Jeremiah and Ecclesiastes; but consider the thankfulness of David, the confidence of Isaiah, and the faith of Paul. If you devote your attention to other authors, give no countenance to whining, drivelling pessimism, which believes that nature's quarries furnish only tombstones, and weeps over every fragrant and beautiful flower of human life as the type of general evanescence; but rather adopt the philosophy taught by such men as he who addresses his soul with such lofty exhortation:

> "Leave thy low-vaulted past,
> Build thee more stately chambers, O my soul!
> As the slow seasons roll."

Never truer words were uttered than those which say: "There is nothing either good or bad but thinking makes it so." Once upon a time a little girl sat by the roadside, weeping bitterly. A benevolent gentleman passing along was touched by her distress, and approaching inquired the cause of her grief. The poor child's utterance was broken by emotion, as she replied between her sobs,

"I was thinking (boo-hoo) what if I should ever grow up (boo-hoo-hoo) and get mar-r-ried, and have a little boy (boo-hoo), and the boy should grow up and go to war, and be sh-sh-shot," (climax of tears and sobs). There are a great many people in the world very like that little girl. JAMES WESTON CARNEY.

THE PULSE OF ANIMALS.—In horses, the pulse at rest beats forty times per minute, in an ox from fifty to fifty-five, and in sheep and pigs about seventy to eighty times. It may be felt wherever a large artery crosses a bone, for instance. It is generally examined in the horse on the cord which crosses over the bone of the lower jaw in front of its curved position, or in the bony ridge above the eye, and in cattle, over the middle of the first rib, and in sheep by placing the hand on the left side, where the beating of the heart may be felt. Any material variation of the pulse from the figures given above may be considered a sign of disease. If rapid, hard, and full, it is an indication of high fever, or inflammation; if rapid, small and weak, low fever, loss of blood, or weakness. If slow, the probabilities point to brain disease, and if irregular, to heart troubles. This is one of the principal and sure tests of the health of an animal.

LIGHT vs. DARKNESS.

THE very first of all created things upon the earth was luminous matter, "and God saw the light and it was good." Without going into a learned discussion upon the subject, I would impress upon the intelligent minds of my country-women, that light is absolutely necessary to life, health, and longevity. In no other country has the mania for dark homes been carried to such an extent as in America, in this progressive nineteenth century. Educated ladies profess an esthetic love for dark rooms, whose walls they decorate with dark papers, and in which they spread furniture of polished ebony; so that darkness almost Egyptian rules the household. Is health, the greatest of all earthly blessings, secured by living in an atmosphere of gloom? Is the air we breathe kept pure and wholesome when the sunlight is excluded? Darkness produces dampness, which generates malaria and kindred ills. Heat and light are life; cold and darkness, death. This is a very old and very true apothegm. We may find by analysis, no difference in a cubic foot of air from a dark room, with closed blinds, from that of a cubic foot taken from a light one with open portals; nevertheless it is a fact that the cheerful light and warmth of the latter have a better effect upon the animal economy.

It is said that an invalid should have 1,200 cubic feet of fresh air every two hours. Can they enjoy this blessed life invigorator in ill-ventilated rooms, where free ventilation is prevented by heavy curtains and closed blinds that shut out the beautiful sunlight? If we wish a choice plant to expand and give fragrance and bloom, we place it in a sunny window, and it becomes a thing of beauty and joy to the beholder. Are our human "olive plants" of less value than a choice exotic which we would cherish tenderly?

Who has not read of Florence Nightingale's observations in the Crimea, showing the difference between the shady and the sunny sides of the hospitals? In St. Petersburg the shady side of the hospitals was so notoriously unfavorable to the sick soldiers that the Czar decreed their disuse. Dr. Lewis says that when he was practicing in Buffalo, N. Y., during the memorable cholera seasons of 1849 and '51, he saw at least five cases of cholera in the houses on the shady side of the street, to one on the sunny side. He says: "Trees

should never stand near enough to a dwelling to cast their shade upon it; and if the blinds were removed, and nothing but the curtain within with which to lessen the heat on the hottest days, it would add greatly to the tone of our nerves, and to our general vigor. I am sure I have cured a great many cases of rheumatism by advising patients to leave bedrooms shaded by trees or a piazza, and sleep in a room and bed constantly purified by the direct rays of the sun."

The blood needs all the oxygen it can assimilate, that it may do all the work assigned it. If the air is vitiated we suffer, and the whole system feels the effect. Hence, plenty of light is necessary to keep us in health, while darkness, unnatural darkness, is injurious. The London *Times*, in giving an account of the opening of the Suez Canal, said: "It would take the conceit out of the grand European who fancies he is the flower of the human race to walk through a crowd of Arabs and measure their stature and breadth of shoulder. Their drink is water, their food millet, maize, and vegetables." The great source of their vitality, however, is the sun, and the pure air of the desert.

An article in a New York magazine says: "His ancestor, whom he remembered well, used to sun himself by the hour for many years. He reached the age of ninety-seven, and his father, who was equally a worshiper of the sun and basked daily in its rays, lived a hundred years."

The eminent French physiologist, Flourens, admits that human life may be prolonged under certain conditions of comfort, sobriety, freedom from care, regularity of habits, and the observance of the rules of hygiene, and he terminates his interesting study with the aphorism: "Man kills himself rather than dies." The German physiologist, Haller, maintained that man might live to the age of two hundred years. The strongest physical constitution would soon succumb to the evil effects of confinement in dark, noisome, unventilated apartments. It was the German physiologist, Hoffman, who summarized the means of reaching great age as follows: "Avoid excess in everything; *breathe pure air;* adapt your food to your temperament; shun medicines and doctors; keep a quiet conscience, a gay heart, a contented mind."

JENNIE F. SNELL.

THE GENESIS OF ALCOHOL.

BEER, WINE, AND THE "EVIL SPIRIT."

ALL kinds of beer are essentially the same in composition and in the composing, varying in amount of alcohol, in bitterness, in amount of malt extract, and in their proportion of water, as seen by the following tables, 1 and 2, 3 and 4:

TABLE 1.

Bavarian Lager Beer—
24 Berlin Scheffels Barley Malt.
48 " Pounds of Hops.
½ " " Carageen Moss.
1 Quart of Yeast.
1 Centner of Pitch.

TABLE 2.

Brewing of Bavarian Bock Beer—same as above, except
32 Berlin Scheffels Barley Malt, and
1 Pound Coriander Seed,

being 8 scheffels more of malt, which will yield so much more of alcohol, as we shall see if we observe the proportion of substances in each kind of beer according to Otto, quoted by Ure.

TABLE 3.

Bavarian Lager Beer—

Water,	91 per cent.
Malt Extract,	5.4 "
Alcohol,	3.5 "

TABLE 4.

Bavarian Bock Beer—

Water,	88.5 per cent.
Malt Extract,	6.5 "
Alcohol,	5 "

In none of these specimens are hops, or its bitter principle, Lupulin, mentioned. Yet it was there, probably included in the

malt extract. It should have appeared by itself.

The malt, hops, and water are the essential substances in the make-up of beer. Pitch is for the purpose of preserving it. The yeast is used to induce fermentation, and the moss is added as a mucilage to secure lasting foam and flavor, while the coriander seeds are used merely for flavor.

THE MAKING OF BEER.

Malt is produced by causing, in any manner, any kind of grain to grow, germinate, or sprout. Barley is usually taken, and steeped for some time in water, when it is heaped upon the floor, or spread and turned, to allow it uniformly to absorb oxygen, produce heat, and to sprout. These conditions induce in the grain the formation of a peculiar nitrogenous or albuminoid substance named *diastase*, that has the especial property of catalytically inducing starch in the presence of water to absorb it, and change into glucose. When the germination, or growth, has proceeded far enough, the life of the barley is killed by heating the incipient malt in a kiln. The malt is then cracked, and steeped in water of 176 degrees Fahrenheit, which readily dissolves the diastase, and brings it in close contact with the starch of the malt, inducing the formation of alcohol. The fluid, composed of water, malt extract, and glucose, is strained from the exhausted malt, and pumped into a boiler into which the hops are put, whereupon the whole is boiled for some time, and then rapidly cooled to the temperature of about 60 to 70 degrees Fahrenheit, when yeast in suitable quantity is added.

GENESIS OF ALCOHOL.

Now alcohol is first seen. It was not in the barley, as some say it was. Its elements were there in the form of starch, which is composed of oxygen, O_5, hydrogen, H^{10}, and carbon, C_6; while the alcohol (ethylic) is composed of the same elements, but in the proportions of oxygen, O_1, hydrogen, H_6, carbon, C_2. If to the starch one atom of water, O_1, H_2, is added, we have glucose, O_6, H_{12}, C_6. This can be split into 2 alcohol, O_1, H_6, C_2, and 2 carbonic acid, O_2, C_1.

This splitting of the elements of a starch atom, plus a water atom, and recombining those elements of glucose into carbonic acid and alcohol, is produced through the instrumentality of a *fungus* cell having a spherical form, and named *Torvula Cerevisiæ*. It is so minute that it is invisible except under a good microscope, where it can be seen that yeast is composed almost entirely of Torvulæ and another still smaller fungus cell named *Penicilium Glaucum*. See Pasteur, Ure, Fownde, Watt, etc.

In the menstrum that receives the yeast Torvula cell there must be a certain amount of nitrogenous or albuminoid material that may be used by the Torvula cell for its own growth, nutrition, and reproduction. To keep itself warm it needs glucose, which it splits up and burns in part, producing carbonic acid, which comes off from the menstrum in the form of bubbles, unless retained by some strong inclosing cask or bottle. The commotion caused by the bubbles gives the name fermentation to this process, although that name is often applied to other analogous processes. They are, however, usually designated by the addition of a defining adjective The alcoholic is also sometimes specified as the vinous fermentation. This action of the cell discharging carbonic acid induces me to name the Torvula a yeast *animal*, instead of a yeast plant, as it is usually named. Plants do not excrete but do absorb carbonic acid. The *Penicilium Glaucum* may be a plant in its character; yet, as it absorbs oxygen rapidly under favorable conditions, it also has animal indications.

After the carbonic acid is discharged from the atom of glucose by the Torvula, by an action analogous to the breathing of any other animal, the Torvula excretes the remaining elements of the glucose in the form of alcohol, as a *liquid excrement*,

this action being analogous to the *renal* action of other animals. The alcohol remains for a time in the menstrum, but ere long, unless confined, will slowly evaporate, or by the application of heat it will be rapidly driven off; and, if passed through a metal worm, surrounded by cold water or other cold substance, will be condensed and obtained by itself.

The Torvula, under favorable conditions, multiplies with great rapidity, in a short time making up by their immense number what they fall short in size. When the alcohol is largely increased, it kills the Torvula, which thus dies in and by reason of its own excrement, and the fermentation ceases.

It should be said, before I return from this digression, that some do not think the *Penicilium* is the cause of the production of lactic acid; but all agree that alcohol has but one cause of existence—the action of the Torvula upon glucose in some menstrum that also contains nitrogenous or albuminoid substance. Thus there is no alcohol in grain, but there is in leavened dough. The carbonic acid and alcohol produced in the dough raises it or lightens it; but when the dough is subjected to heat in cooking, the carbonic acid gas is still more expanded, and the alcohol is entirely driven off, so that there is none of it in bread nor in any cooked article.

As soon as the fermentation in the beer has produced the desired results, variable according to the case, it is stopped, at least it is allowed to go on only very slowly in the casks and bottles into which it is drawn, and where it is retained, that it may "ripen with age," as the expression is.

In the olden time, hops were not put into beer; and when brewers began to use them, severe laws were passed punishing whoever used this poison, as it was named, in making beer. At that time, water, malt extract, and alcohol were considered the only proper constituents of beer. Any cause of bitterness was not allowable. New tastes have been produced, and now the Lupulin of the hop, or its bitter substitutes, forms a part of all beers.

Any grain-malt may be substituted for barley-malt. Indeed, glucose from any source will supply the alcohol, if the Torvula and the albuminoid substance is properly supplied. Some bitter substances might be substituted for Lupulin with advantage to the health, and the desired flavor can by the chemist be imparted. Indeed, the liver, one of the most important organs of the body, is very unfavorably affected by either alcohol or Lupulin, if the use of either is long continued, and the effect of both acting together upon the liver is very bad indeed, since their action upon the liver, both directly and indirectly, unfits it to perform its very important duty of assisting in warming the body. Hence nature, when these substances are used deranging the liver, or if it is deranged in any other way, will if possible fatten the body so as to preserve, as far as possible, what little heat is produced. It will of course be seen that such fattening is not a mark of high health, but, as is noticeable among the Germans, it indicates an undesirable condition.

In this view, the force of what Dr. Fothergill says will now be appreciated. He remarks in his work upon Indigestion and Biliousness, that "The addition of alcohol to a dietary rich in all materials, especially albuminoids, is a fertile factor in the production of liver indigestion; and of all the alcoholic beverages, those prepared from malt act most potently for evil."

Alcohol is always a deceiver.

THE HERITAGE OF DRUNKENNESS.—The drunkard leaves a sad heritage to his child. It is bad enough for a man to debase and degrade himself, but still worse to transmit to his offspring his degradation. It is a generally recognized principle in the propagation of the human and animal species, that like produces like, and this principle is found to hold true as regards the offspring of drunk-

ards. Not all the children of drunkards will be addicted to the use of strong drink. Usually the mother is not addicted to the use of strong drink, and oftentimes loathes it with all the power of her soul. Her influence exerts a saving power over the offspring of the intemperate father, and some of the children will be able to resist the tendency which they feel to partake of strong drink. A large part of the children of the drunkard, however, inherit a strong appetite for alcoholic liquors, and it requires a powerful effort to resist the temptation to indulge. They have also inherited a depraved nervous organization, often with a weakened will and ill-balanced intellect. Samuel Royce, in his work on "Deterioration or Race Education," says: "The drinking habit of the parent is in most cases an irresistible impulse or disease in the child, uncontrolled by any motive whatever." When both parents are addicted to intemperance, very few of the offspring escape going the same way.

An appetite for strong drink is not the only heritage the drunkard leaves his children. Weakened intellects, ill-balanced minds, a predisposition to insanity, and even idiocy are also transmitted to the offspring. Many of the children of drunkards become insane, many are idiotic, and not a few on account of their unhappy organization are driven to take their own lives. Maudsley says that drunkenness in the parent is a cause of idiocy, suicide, or insanity in the offspring. Morell, who made the study of human deterioration a specialty, cites many cases of children of inebriates cursed in later years with the hereditary craving for alcoholic liquors, leaving one insane asylum for another, and ending in marasmus, general paralysis, in a perfectly brutal condition, with the utter extinction of reason and conscience. Of 300 idiots examined by Dr. Howe, in the State of Massachusetts, 145 were the children of intemperate parents.

Should the drunkard be allowed to bring into the world children imbued with an almost irresistible appetite for strong drink, predisposed to insanity and suicide, or perhaps idiotic? It is an infamous outrage upon the innocent child, and should be prevented by placing the drunkard in an asylum where he can not become a father until he has reformed. It would be far better for society and for the State to place the drunkard in an asylum and keep him there till he is reformed, than to allow him to become the father of imbecile, insane, or criminal children, whom the State must care for. Prevention in such cases is better than cure.

H. REYNOLDS, M.D.

MY SICK DAISY.

THAT is the name of my pet cow. The ladies call her pretty. She has a beautiful daughter, which my grandchildren have named Buttercup. Daisy is my pet, and Rex, the horse, my son's pet. I take excellent care of Daisy, and feed her well; sometimes, it may be, almost too well. I do not keep any pig, neither do my neighbors. Daisy is a favorite in all the neighborhood, and they bring crusts, crumbs, etc., to put with ours, for the nice cow to eat. She has a wonderful appetite. She is intelligent, gentle, yet inclined to gluttony, if I must tell it all. She feeds voraciously, and eats hay as if she had been fasting a long while.

Now, it happened that her mistress was taken sick, and the hired help put more than ever before into the cow's pail. Sour milk, which had been made into Dutch cheese, went to that pail. I had some misgivings, but kept on "stuffing" my dear, bright-eyed cow. Everybody who came along praised her sleek looks. She gave two pailfuls of the richest milk, each day. She is of the Jersey stock, mainly. So "knowing" is she, that if thirsty, tangled, or worried by flies, she

will call to me. I do not turn her away to pasture, but tether her here and there by day, putting her into the barn at night. She will lick my hand and follow like a dog. Occasionally, she thinks she knows best which way to go, and if I take up a little stick to carry my point, it does not scare or provoke her at all. She minds me then, but seems to say, "I knew you would not really harm me, and it is nothing to be remembered." She never tires of looking at me if I am in sight. The reader sees I am attached to her.

But just when she was being fed to the utmost, a matter so much excited me and absorbed my attention, that for once I forgot Daisy, and let her be out in a thunder-storm, hitched under a tree, and for about two hours after, the drops falling long on her back, and a colder air blowing. Soon her udder became swollen, especially upon one side, and one of the teats gave bloody milk. The milk nearly ceased, and became changed, thin, watery, in the other teats. Her appetite, yes, her appetite began to fail. She chewed slowly, as if her jaws were lame. It became difficult for her to get up, and she walked slowly, in a kind of sinking way.

When her sickness was known, all wanted to see her. One said she had the garget—a clear case of the garget. I must give her some of that root, raw beans, and a little saltpeter every other morning. Another guessed she had the creeps—cattle sometimes had the creeps. Dose her with sulphur. Has she lost her "cud"? It was clear she had, for she did not chew it. One must be made and put in her mouth. Had I bored her horns? It might be horn-ail. Put a little kerosene back of her horns. Had I sent for the veterinary? A cattle doctor lived not far away, reported well-informed. His patients sometimes died, it was confessed. One woman, with large perceptive organs, great energy, and iron temperament, made it a point to inquire if I had done this and that. In replying to her my sense of truth at last failed me, and I would answer just as I could best satisfy and get rid of her. That, you see, was startling, and to myself almost as queer as Daisy's sickness.

"Dear Daisy," I would say to her, and she would look at me so mournfully. The brightness had departed from her eye. Her pulse was too quick, and fluttered. Her breathing was rapid. A drivel ran from her mouth. She would try to eat and give over, like a sick person.

What *did* I do for her? Nothing that would harm her. I gave her warm drinks, and then cooler. I fixed her nice beds. I bathed her bag and the small of her back with warm water. I milked and milked her teats. I left her alone enough for rest. If she would take a little bran, a few oats, some heads of clover, a potato, nicely washed, a handful of selected hay, she had these. I encouraged her to take a little exercise, as her strength might be. I placed her where the breeze might refresh, but would not chill her. I made myself about sick working over her—even took some of her fever. I watched every symptom. One morning I came in and reported to Mrs. H., who was herself far recovered, that Daisy had a little less fever.

Now, it would take some time to tell how one symptom after another stood forth, showing that Daisy was going to live after all, and showing to some neighbors, as they chose to think how much good *their medicine* had done. Their medicine (!). Daisy and I know all about the remedies. She found her cud herself, is herself again, in all her wonted excellency, save that the one teat, which shed down blood and water, is not warm, and does not give as much as the others. But I milk it full as much, and notice that it gains in size, in amount of milk, and that I am going to recover it altogether.

L. H.

A ONCE famous quack doctor headed his advertisement: "Ho! all ye dyspeptics!" That's just what dyspeptics won't do. If they would all hoe vigorously, they would not need any other medicine.

NOTES IN SCIENCE AND AGRICULTURE.

The Carson Prison Foot-prints.—Prof. Joseph Le Conte, writing from Berkley, Cal., sends to *Nature* a brief account of the supposed human foot-prints found in the shale at Carson, and agrees with Professor Marsh and others in attributing them to a large sloth. "The so-called human tracks," he writes, "occur in several regular alternating series of fifteen to twenty. In size they are eighteen to twenty inches long, and eight inches wide. In shape they are many of them far more curved than the human track, especially in soft mud. The stride is two and a half to three feet, and even more. The outward turn of the track is in many cases greater than in human tracks, especially in soft mud. But the most remarkable thing about them on the human theory is the straddle—that is, the distance between the right and left series. This I found to be eighteen, and even nineteen, inches, which was fully as great as that of the mammoth tracks. This is probably the greatest objection to the human theory. On the other hand, the great objection to the quadrupedal theory is the apparent singleness of the tracks, and the absence of claw-marks. But it must be remembered that the tracks are deep, and the outlines somewhat obscure, and also that the mammoth tracks, on account of tracking of hind with fore foot, are in most cases, though not always, single.

"After careful examination for several days, the conclusion I came to was that the tracks were probably made by a large plantigrade quadruped, most likely a gigantic ground-sloth, such as the mylodon, which is found in the quaternary, or the morothenium, which is found in the upper pliocene of Nevada. The apparent singleness, the singular shape, and the large outward turn of the tracks I attribute to the imperfect tracking of hind and fore foot on the same side, while the absence of claw-marks was the result of the clogging of the feet with mud. This view seems to me most probable, but many who have seen the tracks think them human, and I freely admit that there is abundant room for honest difference of opinion."

Booming.—The term "booming" is applied, in mining parlance, to an operation much resembling the old process of "flushing," as used in Yorkshire, for discovering lead lodes. A reservoir is first constructed at the head of the ground to be worked. Into this water is conducted, from the most convenient source still higher up, by flumes or ditches. These reservoirs vary in size from a small pond to an acre or two lake, and the ditches are often eight, ten, and twelve miles long. When the basin is full, and a continuous head of water is in running operation, gates are opened, letting loose the whole volume of the liquid, which tears down the mountain-side in a huge volume, sweeping everything before it, carrying tons of bowlders, gravel, and dirt down to the gulch below. If auriferous ground is to be worked, a long and massive wooden flume is built at the foot of the hill, into which the *débris* is carried with all the force of the falling waters, and the sand and rocks washed along in its course, while the gold is deposited by its own gravity behind the riffles in the bottom of the race. These flumes are built with great strength and solidity to withstand the immense wear.

Should Women Ride like Men?—The above subject has created some discussion in the English newspapers. The *Lancet* thinks that it would be as well to leave the determination of the question to those whom it principally concerns. As a matter of fact, although it may not appear to be the case, the seat which a woman enjoys on a side-saddle is fully as secure, and not nearly as irksome, as that which a man has to maintain, unless he simply balances himself and does not gripe the sides of his horse either with the knee or the side of the leg. It is curious to note the different ways in which the legs of men who pass much time in the saddle are effected. Riding with a straight leg and a long stirrup almost invariably produces what are popularly called knocked-knees. Nearly all the mounted soldiers of the British army suffer from this deformity, as any one who will take the trouble to notice the men of the Life Guards and Blues walking may satisfy himself. On the other hand, riding with a short stirrup produces bowed-legs. Jockeys, grooms, and most hunting men who ride very frequently are more or less bow-legged. The long stirrup rider gripes his horse with the knee, while the short stirrup rider gripes him with the inner side of the leg below the knee. This difference of action explains the difference of result. No deformity necessarily follows the use of the side-saddle if the precaution be taken with growing girls to change sides on alternate days, riding on the left side one day and the right on the next. The purpose of this change is to counteract the tendency to lean over to the side opposite that on which the leg is swung.

Old Shoe-leather.—You probably think if you look very sharply at an old shoe when you throw it away, you will know it again if it ever comes back to you. But that doesn't at all follow. One of these days you may button your dress with an old pair of slippers you once owned, comb your hair with a boot, or grasp a cast-off gaiter while at your dinner. This is not romance, for old shoes are turned to account by manufacturers in the following manner: They are cut into very small pieces, and kept for a couple of days in chloride of sulphur. The effect of this is to make the leather hard and brittle. Next the material is withdrawn from the action of the chloride of sulphur, washed with water and dried. When thoroughly dry it is ground to powder, and mixed with some sub-

stance like glue or gum, that causes it to adhere together. It is then pressed into molds and shaped into buttons, combs, knife-handles, etc.

On the Colors of Water.—Viewed in relatively shallow masses, clear water appears wholly colorless. In our daily dealings with the liquid we seldom have occasion to observe it in great depths; hence it has been generally believed that water is quite destitute of color. The ancients were accustomed to explain the transparency of some bodies by assuming that they partook of the nature of water; and we now speak of a diamond as of the first water, to emphasize its perfect transparency and colorlessness. If, however, we regard the larger masses of water in nature—the seas, lakes, and rivers—we shall receive a different impression. In these, the water not only appears colored, but of various colors, and of a rich diversity of shades. The Mediterranean is of a beautiful indigo, the ocean is sky-blue, the Lake of Geneva is celebrated for its lovely and transparent azure waters; the Lake of Constance and the Rhine, the Lake of Zurich and the Lake of Lucerne, have waters quite as transparent, but rather green than blue; and the green waters of the little Lake of Kloenthal, near Glaris, can hardly be distinguished from the surrounding meadows. Other waters are of a darker color, like those of the Lake of Staffel, at the foot of the Bavarian Alps, which was quite black the day I saw it, though clear in shallow places.

These facts start the questions whether water, after all, has not a color; if it has, what the color is, and what causes the varied tints under which it is seen. The solution of these questions has long occupied the minds of scientific inquirers, and it can not yet be said that they have been answered. Disagreement still prevails respecting them.—*Popular Science Monthly.*

Garden Experiments.—The results of some of the experiments made at the New York State Experiment Station show:

That the period required for the *germination of peas* varies with the temperature of the soil; in other words, with the earliness of planting. Those planted on April 4th and 5th required for vegetation from twenty-three to twenty-five days; while others, planted on May 6th, required only from twelve to fourteen days. The earlier plantings were fit for use in seventy-seven days, the latter in fifty-four days. The period of ripening the seeds varied from seventy-four to one hundred and nine days.

The Earliest Cabbages, out of a list of twenty-nine sorts, were Early Oxheart and Nonpareil, the latter producing six heads in thirteen plants, while the former produced twenty-three heads out of twenty-seven plants.

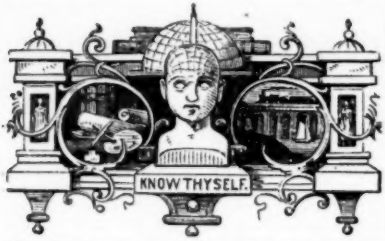
The Mayflower Tomato (one of the *American Garden* premiums) is considered a very promising variety. Sown in a hot-bed April 7th, it vegetated April 12th, was transplanted into the garden May 29th, blossomed on June 16th, and furnished ripe fruit August 8th, two days before the Early Acme. These fruits measured three inches in diameter, somewhat larger than the Acme, and were nearly or quite as smooth. The plants were very prolific.

Potatoes raised from eyes cut large yielded more and were of better quality than those from eyes cut shallow. Single eyes cut deep yielded one hundred and fifty-two bushels; ordinary cuts yielded one hundred and twenty-seven bushels; and whole potatoes yielded eighty-three bushels of merchantable potatoes per acre.

Employing the Insane.—That the insane need not be altogether a burden upon the State, most of our economists know; but it has fallen to the lot of the Willard Asylum of New York to show that the insane may be employed in lines of useful labor which have been commonly regarded as altogether out of keeping with their mental condition; in fine, some may be trusted with tools and implements which we have been wont to consider as more likely to be used for deeds of violence than of use. The *Plattsville News*, in commenting upon the management of this institution, remarks:

"At the Willard Asylum pains are taken to keep the patients actively employed, and during the past year two hundred men were occupied three months in building a railroad four and a third miles long. Notwithstanding axes, picks, shovels, crowbars, and blasting powder were in constant use, no accident nor contusion occurred, nor was there any riotous or disorderly conduct on the part of the laborers. The report says: 'Judged by this experiment, in which one hundred and fifty to two hundred able-bodied lunatics were laboring together, the inference is conclusive that under proper management and with due care it is conducive to their mental comfort and health. Employment diverts from morbid fancies and troublesome hallucinations. Persons afflicted find a relief from their delusions and sufferings in the use of tools and in the engagements in the occupations of everyday life.'"

The Whitewash on the National Capitol.—The following is said to be the recipe for making the brilliant stucco whitewash used on the outside of the Capitol at Washington: Take half a bushel of good unslaked lime, slake it with boiling water (cover it during the process to keep in the steam); strain the liquid through a sieve, and add to it a peck of salt dissolved in warm water, three pounds of ground rice boiled to a thin paste; stir in, boiling hot, one-half pound of powdered Spanish whiting, one pound of white glue; add five gallons of hot water; let the mixture stand a few days, covered from the dirt, and apply with kalsominer's brush.



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GAMBETTA'S BRAIN AGAIN.

NOT long ago some remarks were made in this place with reference to the probable causes of Mr. Gambetta's brain weighing so little, as was reported; whereas during his public life he was always described as having a large head. Being a man of extraordinary mental activity, and of unusual power as a controller of men, it was generally supposed that his brain was much above average size. We stated that the smallness of the weight, 1,100 grammes, as reported, might be due to changes in the cerebral substance, occurring in great part previous to his death; and as he died of a disease which conduces to rapid disintegration, or decomposition, the further changes of the soft cerebral tissues into—we might say—fluid, or semi-fluid matter, must have been exceedingly rapid after death, and had considerably advanced before the autopsy, so that the solid mass which was then removed from the cranium and weighed did not represent fairly the organ which the eminent Frenchman possessed in the full vigor of his powers.

Now our attention is again drawn to the subject, by the published opinion of an eminent Russian physiologist, Doctor Ivanofsky, of St. Petersburg. He evidently holds to the theory, that men of eminence possess large heads and correspondingly large brains. Doctor Ivanofsky says in a letter to a Russian newspaper: "That the weight of the brain in its normal condition that is free from organic pathological changes has its importance and meaning; but as Professor Syetchenoff has it in his work on the reflex action of the brain, 'even while admitting that the soul is not the product of the activity of the brain, yet since in every case the brain is the organ of the soul, that organ must change its quantity and even quality, in accordance with the use and misuse it had been subjected to by the soul.' Indeed, when viewed in this light, the men of science will find that, relatively speaking, Gambetta's brain was not as light as it seemed to them when weighed on their scales."

The Doctor goes further and asserts that it can be proved that the said brain weighed no less than that of Byron. The brain of Byron weighed 1,400 grammes, and was nearly equal in size to the brain of General Skobeleff, who died recently. It has been urged by the opponent of the large-brain theory, that Skobeleff is another evidence of importance in their favor, and that his brain was of the small class; its weight as shown at the autopsy was 1,427 grammes. Rating 1,100 grammes at 39 ounces, we shall leave it for the reader to approximate the weight in ounces.

To prove his assertion Dr. Ivanofsky reminds the gentlemen of science, and the public generally, that to begin with, Gambetta had but one eye, the left, and as a direct consequence the nervous apparatus of the defunct eye, designed by nature for receiving rays of light, and

transmitting their impressions to the *sensorium*, had remained inactive for long years. Now, this eye apparatus is composed of the retina, the optic nerve, and the optic center in the brain; and its prolonged disuse, which covered a period of thirty years, must have produced an atrophy of the right optic center, and that atrophy naturally affected greatly the subsequent weight of the brain matter.

We had occasion in one of our chapters on Comparative Phrenology to cite the case of the eminent mathematician, De Morgan, who had but one eye, and although his brain was very large as found after death, yet the optic center relating to the destroyed eye was so much reduced in the substance, as to reduce materially the dimensions of the hemisphere in which it lay.

Returning to Dr. Ivanofsky, he claims that leaving aside the retina, and that portion of the optic nerve which had to be severed during the withdrawal of the brain from the cranial cavity, the want of the optic cerebral center of the right side alone, taking into consideration its long standing, must have shown at the least a deficit of 120 grammes in the weight of the brain. Besides this fact which would add that amount to the reported weight, making it 1,220 grammes, "we should consider also the deteriorating process of the illness from which Gambetta suffered, as a well-known anatomist well remarks, until more attention is paid to the condition of the blood-vessels, and to the quantity of the serous liquid which soaks through the brain, or its vesicles, the weighing of the brain matter will prove itself of very little importance. Thus taking into serious consideration Gambetta's long illness, and the localization of the disease, as also his long absence from food, or rather the regular starvation he suffered for days before the end came, it must be that his brain exhibited the symptoms of its great lack of blood, or normal maintenance. If we remember still further that the quantity of blood and serous liquid that had filled the brain and vesicles, was neither ascertained nor weighed, and that consequently it must have been a very reduced mass of tissue, in fact wanting in fully 200 grammes, which would be the relative proportion of such blood and serous liquid; taking 1,100 grammes as the basis of calculation, we arrive at the weight of 1,420 grammes for the brain, a few more than Byron's, and a few less than the weight of Skobeleff's."

The reasoning of the Russian physician seems to us to be valid, or at least worthy of consideration; at any rate our own views have in it such confirmation that we feel constrained to present it, especially as nearly every week's mail since the death of Mr. Gambetta has brought us some fresh inquiry with regard to the apparently unsatisfactory statement, that the great Gambetta's brain weighed only 1,100 grammes.

PUT DOWN THE PISTOL.

THE mania for slaying, that, like the suicidal mania, appears at intervals in society, and furnishes the news reporter with a variety of items in horror fully equal to the demand of the public for sensation, suggests to every thoughtful mind that a great evil exists which the laws fail to reach. Not only in the prevention, but in the punishment of the act, does the law exhibit its shortcomings, for men are shot down in the public streets and common resorts of society

and the murderer is, in the great majority of cases, acquitted, and laughs in the face of outraged justice and of law-abiding people.

This is productive, naturally, of two results—retaliatory acts of desperation by the friends of the slain, and, what is still worse for the moral order of a community, the assumption of the vindication of justice by an enraged populace, that, blinded by passion and hasty in judgment, perpetrates murders if possible more revolting than those it aims to avenge. It may not be generally known that the average number of murders in these United States alone is between four and five daily, and in the great majority of cases the weapon employed is the pistol. In the street, the restaurant, the hotel, and even in the seclusion of home, in the city and in the quiet country village, the report of the revolver is heard. One is shot for destroying the happiness of a family; another because he has failed to settle a small debt; another for playfully changing hats with the shooter. The newspaper record of daily bloodshed is sickening, and the impotency of the law to punish makes one blush to own his nationality.

One chief cause of this ghastly evil consists in the unrestrained manufacture and indiscriminate sale of fire-arms, particularly revolvers. Produced at a cost that places them within the reach of all, and allowed transportation through the mails, these weapons circulate as common articles of merchandise, and get into the hands of the young and inexperienced, and, we might say, generally, that those who are the least fit to possess them are for the most part their owners. Few young men think their toilet complete without a half pound of wood and steel in the hip pocket, and which on slight provocation they may draw, and, by accident or design, use with deadly effect to another and to the ruin of themselves.

To the certain knowledge of the writer, one firm alone in this city, during the winter of 1881–'82, manufactured, sold, and distributed, *entirely through the mails*, over 5,000 revolvers, the immense majority of buyers being boys, or young men scarcely intelligent enough to write their own orders. The general manufacture, sale, and distribution of this weapon should be *stopped*, or else surrounded with such restrictions that the possession of them by untrustworthy persons would be almost an impossibility. True, many would cry out that manufactures were being crippled and fetters placed upon trade, but the common sense and humanity of the intelligent would make no protest; besides, common law in no case recognizes the legality of manufactures whose product is for the purpose of destroying human life, except when it is to be used for military purposes. People know that the purpose for which the revolver is used and carried is for the taking of human life, and although some may urge other reasons, yet in the last analysis they all converge to that one point. This is sufficient to condemn the weapon, and legislation should interfere to drive it out of common use.

The druggist is restricted in the sale of all active poisons and of those not necessarily fatal unless taken in large quantities. In several of the States he is required to pass an examination before he is allowed to dispense them, and is held to a direct responsibility for any mistake he or his subordinates may make when compounding them by a physician's order.

The manufacturer of explosives, a need-

ed article of mechanical industry, is restricted as to his location and vicinity to dwellings; even the saloon-keeper, if, by selling his slow poison causes death, may be liable to heavy damages; in short, the manufacture or sale of every article of commerce that by its indiscriminate distribution among the people might have the effect of destroying human life, is bound by statute restriction; but the revolver is practically unfettered, and although most deadly of all, is freely sold in the open market, offered as prizes in numberless cases, and so placed in the hands of old and young. Can not something be done for our bleeding and suffering people? Will not the law-makers do something to deliver us from the brutal ruffianism of the day which finds its support and stimulus in the loaded revolver at the hip; from the deadly carelessness of folly and ignorance, and also from those unhappy accidents which are of frequent occurrence even in the walks of culture and experience? A system of police regulation that would drive the pistol out of the hands of the general public, would be a grand step in the direction of moral reform.

THE NEW HEAD.

NOT a new outcome of the process of civilization which is more elaborate in its convoluted brain structure, and heavier than the maximum weight of the most highly endowed on the record of post-mortem analysis. Not a phenomenon in affairs craniological and cerebral which exhibits to our wondering sense new faculties and powers for which the old classification makes no provision. No, we do not refer to a prodigy of that sort, although the evolution philosophy encourages us to expect it, especially as some thousands of years have passed since those cerebral giants, Moses, Ptahhotep, Solomon, Homer, and Plato, lived; and with all the accumulating advantages of the growing centuries it would seem that there ought to be at least one conspicuous example of new tissue growth and its co-ordinate functions, evidencing the acquirement by man of original faculties unknown to the ancient mind. Our reference is to the new design on the cover of this Magazine; and it is made with the view to some explanation because several readers have asked its meaning. The illustration which formerly occupied the circle of honor, represented a hemisphere of the brain denuded of the outer membrane, and showing the relation of the brain to the skull, as well as the relative situation of a majority of the phrenological organs. That design possessed certain points of technical value best appreciated, perhaps, by the reader who had made some progress in the study of Phrenology. Its general teaching was substantially that the principles of phrenological science have chiefly to do with the brain and nervous system, recognizing nervous substance as the medium or source of the physical manifestation of mental power.

The new head teaches a practical lesson which we would impress upon every reader of the JOURNAL, and upon every one who thinks it worth while to look into the subject of Phrenology. It teaches a principle which every well-instructed phrenologist defines and illustrates on every occasion of the practical application of his vocation—a principle which has been a thousand times communicated through these pages, that the development of the human brain is from the

medulla oblongata as a center, and that fibers proceed from that in all directions to the convolutions; that the measure of development in any given region is dependent upon length of fiber and the comparative amount of brain substance indicated by careful observation. The size of an organ is not shown by any hump or bump, or hollow or depression; therefore such things may be due to cranial irregularity, injuries received in early life, and are of easy determination in their effect upon the apparent development of the brain itself.

The early teachers of Phrenology struggled against the imputation of "bumpology" flung at them by opponents and prejudice, and even to-day ignorance and prejudice are heard reiterating the senseless cry.

We would point the inquirer to the structure of the brain as shown by anatomy, and tell them our readings are predicated of development as nature has designed it; that we know nothing of bumps, and proclaim those who attempt to read character from such uncertain premises as unworthy of credit.

THE WAY-SIDE ROSE.

WE were walking in the suburbs of the city where lawns and hedges, wooded clumps, and an occasional stretch of meadow meets the eye that loves to dwell on nature's work in garden or in field, and our attention was drawn to an unusually large growth of wild rose, the bush extending fifteen feet or more along the side-walk. The frequent rains of spring and early summer had favored greatly the development of stalk and flower, and we stopped a while to admire the bush. Breaking off one of the most expanded of the roses, we were struck by the multitude of stamens and pistils which crowded its center. It seemed to us that nature was much too lavish in her provision for the reproduction and perpetuity of the plant. Not only was there the great strong bush holding to the tough soil by so many deep roots as to be able to defy, apparently, a cyclone, but each one of its thousand flowers contained the germs of a hundred plants. The reflection came as we scanned the flower, that nature made no exception of the wild rose, but generally in her work provided for its increase. Not only the plant, but insect and animal life showed this. The most insignificant worm was supplied with the power of producing hundreds of eggs, the smallest plant could develop its hundred or thousand spores, while the tree might cast a million seeds to the wind. And all this energy symbolizes an emphatic purpose to continue the life of each, and that the destructive influences which may surround animal and vegetable life shall not entirely triumph. Some of the eggs will develop new worms, some of the spores or seeds will germinate, and new plants or trees come to perfection, and the new growths will in their turn produce eggs and seeds. This principle in the life of the lower organisms has its lesson for man. It teaches him to expect success in hearty, earnest labor. It teaches him to hope for growth and expansion in his mental nature, as the result of self-study and training. A moral principle taken into the consciousness, nourished by reflection and developed by application in the manifest life, will grow and blossom and bear rich fruitage, expanding and ennobling the character of the man himself, and in radiating a sweet influence will sow seed of its kind in the mental life of others.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a small hand, or in pencil, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*

4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*

5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*

6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable contributions unless the necessary postage *is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Personal matters will be considered by the editor if this is done. Anonymous letters will not be considered.*

SOCIAL ETIQUETTE.—*Question:* What traits prompt a person to offer one or two fingers in shaking hands? M. A. C.

Answer: A person who exhibits this want of courtesy is generally lacking in social development, the organ of Friendship, particularly, being deficient; and he may be said to want also in Benevolence, and that warm and active recognition of human fellowship to which a sanguine temperament conduces.

You ask also with regard to the organization of a person who would probably make a devoted step-mother or step-father. Large social organs, including, of course, a marked development of parental affection in the brain, would be a safe guide.

THE PREPARATION OF MANUSCRIPT.—The inquirer will find among the headings in script type of this "Department," some particular information on the subject of her inquiry. It is well—in fact, it is a matter of common courtesy—for a writer, when quoting from an author, to state the source of the quotation. The cost of the Government copyright of a book is but a dollar and two copies for deposit in the library of Congress. You should send the whole manuscript to the publishers, so that they can judge properly of its quality.

TEMPERAMENT OF NAPOLEON BONAPARTE.—W. H. P.—This remarkable soldier was, as you know, a Corsican by birth, and like Corsicans in general, had a dark complexion, dark eyes and hair. The temperament was mental-motive; he had a very large brain, it being particularly broad in the temporal region and between the ears, and of marked height in the coronal section. He was adapted to science, especially engineering; but his resolution, thoroughness of spirit, and leadership would have made him a captain in almost any sphere.

BUILDING A HOUSE.—A. M. E. P.—Feeble women should live in houses which are built low—pretty much all one story. Tall houses in the city, with their three, four, and five, and even more flights of stairs, are absolutely killing upon our wives and housekeepers who are compelled to live in them. In the ordinary city house of the old style, the housekeeper may be said to live upon the stairs, the most important rooms being separated by two or three flights, the kitchen and dining-room being in the basement, and the sleeping-rooms in the second or third and fourth stories. We hail the introduction of the French flat as an alleviation of many a feminine sorrow, but we would have them built upon more liberal plans than is common.

INVALID.—J. B. B.—You have probably some heart difficulty; the question is out of place in this department, being of a private nature; and as you have inclosed nothing to pay for the postage which a letter would require, it can not be expected that we shall write you. We have too many similar correspondents to make an exception in your case.

HEAD AND CONVERSION.—*Question:* Admitting that a person's character is determined mainly by the form of the head, how is it in the case of the sinful, lawless man who becomes converted and changed? Is the form of the head altered also? MACK.

Answer: Many a man is living a godless, law-

less, and desperate life, who possesses by original endowment a fairly organized brain. He is what he is because of the lack of training in right ways; unfortunate associations having been his from early life, the selfish propensities have been rendered especially active, while the sentiments, moral and religious, have been neglected and blunted, consequently don't exercise their restraint upon him. In other words, his action is the result of a lack of harmony and balance in the activity of the organs. Such a man, brought into new relations where he is influenced by good and noble people, in time experiences a very considerable modification. Then, his selfish propensities not being exposed to the old excitements, are kept in a calm, subdued state, and his moral and religious faculties become aroused from their old torpor and are made active; he appears in a new character, he is changed; yet the form of the head may not be absolutely altered, so that it is easily detected externally. Not long ago we published an article by a Presbyterian missionary of considerable prominence in the West, in which he stated a very interesting case which had occurred in his own experience. It was that of a man who had been given to ways irregular, but becoming converted, turned right about and engaged in religious work. In the course of a few years the upper part of his head increased, so as to be conspicuously larger than it was in the days of his folly and sin. We can say, generally, that if the person be young, change in his character will, in the course of years, be manifested in the form of the head; if he be in middle life, the change will be chiefly an interior one, that of organic exercise and activity rather than of such growth as will manifest itself exteriorly.

NATURAL SUGAR.—*Question:* Is the sugar in dates or any other sweet fruit more easily digested than that which is manufactured from cane? L. B.

Answer: Yes, the saccharine element in fruit and foods which are eaten much as nature made them, has, unless one over-eat, no injurious effects, as have the chemically prepared or manufactured sugars. We are told that in the sugar season of the West Indies, the colored people for the most part live upon the sugar-cane and thrive, but were they to attempt to subsist upon the sugar manufactured from the cane, there would be a very different result.

THE FRENCH LANGUAGE.—The best way to learn the French language quickly and well, is to live with French people, studying the text-books, and associating daily practice in conversation with what is learned from books. You can learn to read French by private study, but to speak it well, it is necessary to have oral practice. One of the best methods we know of for home-study is the "Mastery, or Meisterchaft," which is, we believe, conducted by correspondence with a teacher. We can supply you with a series of text-books for about a dollar and a half.

BISHOP SIMPSON'S HEAD.—J. A. S.—You are right in thinking that this eminent bishop of the Methodist Church has a good-sized head; it is very broad, and the forehead retreats somewhat, while the lower part of the face is rather heavy, this association of features imparting a depressed appearance to the head when viewed from the front. An explanation of this fact, which is occasionally met with among eminent men, was made in a late editorial. Bishop Simpson has a very strong, active, forcible organization; his temperament is thorough-going and spirited; he is essentially a worker. A self-instructed man in the main, he has brought himself up from a comparatively low position in life to one of prominence, and is, therefore, an example for young men of moderate endowment.

A STOPPING-PLACE.—C.—There are but few places pleasantly situated at which a person visiting New York City can expect to find hygienic fare. Dr. Charles Shepherd's "Hammam," on Columbia Heights, Brooklyn, occupies a fine position, overlooking the East River and Bay, and is very near the ferry, giving ready communication to all parts of the city. There one finds comfortable accommodation and a good table. D.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

CONSCIENCE INNATE.—Mr. H. B. Fyfe, in his communication to your JOURNAL in the June issue, advances several interesting questions, but has evidently misunderstood Mr. B. F. Underwood's position in regard to an "innate conscience." Mr. Underwood, in common with most modern psychologists, holds that conscience, as well as the other mental faculties, has been developed gradually by the experiences of the *race* (not by mere individual experience alone); that conscience is only a blind guide until enlightened by experience or education. Surely, Mr. Fyfe will acknowledge that conscience in different races leads to opposite results—a blind impulse leading the Hindoo to sacrifice her child to Juggernaut; the Christian to burn heretics at the stake, to burn witches, to wage the wars of the Crusades, etc.

Conscience, when analyzed, is the feeling which

prompts us to do what we think is right, no matter whether it really *is* right or not. If it had been a divine endowment no doubt it would always have prompted us to do what was really right, but all history shows this has not been the case. Mr. Fyfe mistakes the bearings of Phrenology when he thinks it explains how the sentiments or faculties have originated. It really does not say whether conscience, or any other sentiment, has been created out of nothing, or whether it has been gradually evolved by the experiences of the race. All that Phrenology claims to have done, is that it has demonstrated the fact that brain is the organ of mind, and that the shape of the head indicates the quality of that mind. It does not state whence the mind came, or how it originated. Modern psychology shows very clearly that mind, or the nervous system, is not a separate entity, but is a property of so-called "matter," just as music is a property of a piano when played upon by the fingers of a musician. Mental qualities are a production of the brain when played upon by the forces of nature, operating upon the five senses.

Let us ask Mr. Fyfe what sort of a mind there would be if there were no sight, no hearing, no taste, no smell, no sense of touch? There could be no memory, there being no facts of sensation to recall; no music, never having heard a sound; no reason, there being no ideas of sensation or memory to reason upon. There would be nothing but the lowest vegetative life—such as the sponge, or the lowest animal undistinguished from vegetative life. Surely, he does not contend that man has an "innate" sense of justice! This is one of the highest attributes, and the last attained to. True, some well-developed minds will transmit the tendency to be just to their children, but even such children do not often manifest justice until manhood is reached and experience has shown its value.

"What constitutes right and wrong?" asks Mr. Fyfe. Surely, the individual conscience is not the standard of right. It may be said the "general welfare" is the ultimate standard of right and wrong. Important it is, indeed, that we should have such a *feeling* that prompts us to do what *we think* is *right*, otherwise we might know the right yet seldom do it, as is too often the case when conscience is not well-developed.

Your correspondent asks, also, why environments have not made animals moral as well as men. We reply by asking him another question. Why are not all trees oaks? why are not all animals sheep? why are not all men moral? Phrenology does not claim to answer these questions, but the evolution philosophy does, I think, to some extent at least.

Phrenology is not a *philosophy*, but a *science* demonstrating certain facts in regard to the human brain, and the outward manifestation of character by shape of head, etc. Certainly George Combe made some true philosophical deductions from the science; such as, in his moral philosophy, that "man is a creature of circumstances"; or, as he might have said, in other words, "man is governed and developed by his environment." It is sometimes said that the five senses are only the organs of mind. They are much more than that; they are the instruments used by natural forces in developing mind, just as the strings of the piano are the instruments used by the musician for developing music. Without the senses there would be no mind; without the piano strings there would be no piano music. The forces of nature—solar heat, light, chemical affinity, magnetism, etc.—operate upon matter, and vegetable and animal life is the result. Without the sun's heat and light there would be no rain, no rivers, no animal or vegetable life. After the senses are developed animal and mental life are mostly *automatic*. Ideas, thoughts, feelings, come and go in great part independently of the will. We can not remain without thoughts, even for five minutes, any more than we can stop the circulation of the blood. All we can do is to turn them into certain channels, a mode of self-control which is limited indeed, and possessed by some much more than by others.

J. E. SUTTON.

SALT AND LEAVEN INJURIOUS.—A correspondent residing in N. J., writes in regard to her experience in diet. She is a lady physician, judging from her signature, and therefore what she says is entitled to respect. She says:

"I have often thought I would acknowledge my obligation to you for much useful information gathered from your valuable JOURNAL. I have found, after nearly forty years' experience, that very much of the early decay of the teeth and a large portion of our nervous diseases, are engendered at home by the use of common salt, and the fermented food which forms part of meals. These cause irritation and inflammation, to cure which, a poultice of stimulating food or drink is put into the stomach, or a narcotic is used to deaden the sensibility. The final outcome of such cures is a worse condition; inflammation extends throughout the alimentary canal and may threaten its beautiful structures with ruin. I was tormented with toothache until I learned that salt was unnecessary. I contrived to live without it, and found that I could relish my food without salt, and found many exquisite flavors in food which I had never tasted before, and to my astonishment my teeth stopped aching, and have never ached since. The teeth which did not exfoliate are firmer and look better than ever. Other members of my family have been benefited in the same way."

Accompanying the above statements are some recipes for the hygienic preparation of some of

the cereals, which we shall hand over to the kitchen department for proving.

SELF-ESTEEM — SUPPLEMENTARY REMARKS.—In my article on "Self-esteem," which appeared some months ago in the PHRENOLOGICAL JOURNAL, I suggested changing the name of the organ to "Self-control." Since then a number of persons have sent communications in regard to it, some indorsing the idea, others opposing it.

I gave my reasons for the proposed change, and, from the tenor of my remarks, I do not think that it could be reasonably inferred that the suggestion grew out of any morbid desire to remove an old landmark, as I particularly stated that all the other faculties appeared to me to have names most appropriate for them.

As for the names and qualities given or ascribed by "standard authors," let not science be bound beyond reason by such authority; let science be governed by what is true and best. If more light suggests and approves a reasonable change, let us not hesitate to make it, for thereby we most surely advance the subject to a higher plane. Here is a name that implies that the faculty is mostly, if not wholly, absorbed in thinking well of oneself. If the term self-esteem implies anything it implies this. It is useless to say that it implies something else, self-reliance, for example, as this virtually proves the argument for change. The most prominent feature of this faculty is *control*; without it the mind has not complete control of the faculties. The individual may have fine faculties, but without this factor they are of inferior value, and with this faculty their value is increased many fold, or, perhaps better, they are worth their full value.

As for it being a part of *Will*, such has not been claimed. At some future time I hope to be able to make a few remarks on *Will*, or, better, Firmness. The ability to jump a great distance, to walk on a narrow, elevated place, or to play a musical instrument, does not depend on Will or Firmness. One may have the Firmness to force his faculties, but without Self-esteem [Self-control] he will find himself weak; reinforced with "Self-esteem," he will be strong.

It was not claimed that Self-esteem is a moral or non-moral faculty, but simply that it gives the mind the power of control over the faculties in the line the faculties of the mind desire to act; neither is it claimed as a "personal faculty." If it has founded tyrannies and been instrumental in perpetrating fraud and oppression, it has likewise founded and maintained the places of highest culture, been foremost in the ranks of liberty and morality, and done good works in every department of life.

I again repeat, that it is not a moral faculty; it is not conscious of the motive; it is simply the force which holds control and keeps the other faculties up to their mark, and is, as it were, a groove to support them. In this sense it may be termed a *moral* force, and in no other.

It argues nothing in this respect against it because it is large in the criminal classes; on the contrary, it argues in favor of the *control* or confidence idea. It takes considerable assurance on the part of a man to be a criminal, to commit offence against the moral laws of the land, especially when so many before him have been unsuccessful; only a large Self-esteem would give him assurance against such odds.

Outside of a few worthless fellows who purposely get into prison in order to secure a home —such as it is—those who commit crime do not expect punishment, for they always seem to work on the idea that they are smarter than the rest of mankind. Some other man committed murder or theft and got caught, but they are smart enough to "cover their tracks," but when it is too late they discover that it is a most difficult thing to do, for the simple reason that mankind has to be consistent. Unless consistent the world soon discovers that something is wrong, and then suspicion is aroused, and suspicion leads to detection. It is an easy thing for the truthful man to be consistent, but a most difficult and trying thing for the criminal to be. Self-esteem is not governed by the forehead, though in the majority of cases, I think, as has been remarked, the faculty will be found large when the forehead is small. In such cases the unthinking world is surprised at the smartness of the individual, but the well-informed phrenologist is not, for he well knows the value that this faculty gives to the weak frontal powers. It is a great mortification sometimes to men of fine ability to see men of low grade surpass them, and gain the confidence and approbation of the world, but if they would study the noble science of the brain which we term Phrenology, they would understand the cause, and might, in a measure at least, correct it; for it is an indisputable fact that a faculty can be developed and the brain thereby increased in power. No one ever held with pleasure, profit, and honor a public office without this faculty being well-developed. Some of our public men have not had it so well-developed as others. Webster, for example, I think, could not in this respect be rated more than "full," yet we see how well Mr. Webster's actions agree with this idea. He was not the ready man that Clay was. He had more intellect, but he had not Clay's readiness in speech. With more Self-esteem he would have been a greater success, and with a higher crown he would have been "God-like" in soul as well as in body.

Mere Self-esteem does not give conceit. Conceit, I think, is rather the product of an over-

large occiput. What we want in life is balance of parts, and strength of the whole. In nothing does this apply with more force than to Phrenology. We want a good balance as well as strength. That which is not well-balanced only reacts to the injury of itself. Where Nature has not given us balance of organism, it is our duty to discover, not only the weakness, but the remedy. Without the aid of Phrenology the fact of weakness and unbalance is detected, but not the cause. Phrenology is the only science able to detect the cause and supply the remedy. I. P. N.

PERSONAL.

In 1857 M. Renan wrote: "I am proud of my pessimism." In 1883 he writes: "In bidding adieu to life, I shall only have to thank the Source of all Good for the delightful passage through reality which I have been permitted to accomplish." Just a little contradictory, eh?

Ferdinand Schumacher, the Prohibitionist candidate for Governor of Ohio, is the well-known manufacturer of oatmeal and other farinaceæ, of Akron. He not only refrains from the use of liquor and tobacco himself, but he compels his employés, when about the mills, to do the same. Ohioans, elect him.

Mr. William Crawford, a Texas gentleman, in his eighty-sixth year, sends us an acrostic written on our firm name; he designs it, not for publication, but as the expression of his cordial good-will toward us; his sympathy in the mission of Phrenology shows that, although so old a man, his mental powers are far from feeble.

W. A. Hammond, M.D., has aroused the indignation not only of the women of New York, but also of the life insurance authorities, by saying in an article published lately that policies are refused to women, because they are so conspicuously inexact in their assertions concerning themselves. The insurance men assert that women tell the truth as well and as often as men, and that policies are constantly issuing to them, only they are charged a slightly higher per cent. W. A. H. should be more careful about his data.

Dr. Oliver S. Taylor, of Auburn, N. Y., the one surviving member of Dartmouth College's class of 1808, is now in his one-hundredth year of life, and enjoys perfect health of mind and body. The one slight attack of sickness he can remember occurred some seventy-three years ago.

And this same Dr. Oliver S. Taylor was our daily instructor in higher mathematics, natural science, and Latin grammar, in 1844 and 1845, at Franklin Academy.—*El. Prattsburgh News.*

And he did something of the same kind, brother Prattsburgh *News*, for the proprietor of the Phrenological Journal, only a half dozen years or so previously.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

Face all things; even adversity is polite to a man's face.

There never was a mask so gay but some tears were shed behind it.

If I wished to punish an enemy I should make him hate somebody.—*Hannah More.*

The wheel of fortune turns incessantly round, and who can say within himself, I shall to-day be uppermost?—*Confucius.*

True liberty consists in the privilege of enjoying our own rights, not in the destruction of the rights of others.

A bad man is like an earthen vessel, easy to break and hard to mend. A good man is like a golden vessel, hard to break and easy to mend. —*Hindu* (*Hitopadesa*).

The more complete is the mental discipline, the greater is the productive power of society, and the greater the luxury for each.

At the bottom of a good deal of the bravery that appears in the world there lurks a miserable cowardice. Men will face powder and steel because they can not face public opinion.—*Chapin.*

Avoid accompanying your censure with any expression of scorn; with any phraseology which shall convey a wish of yours to degrade or lower in the social scale the object of your reproof.

Education is not learning; it is the exercise and development of the powers of the mind. There are two great methods by which this end may be done; one in the halls of learning, the other in the conflicts of life.

Self-preservation, not of civil society, but of popular self-government, rests on intelligent voters. The elector must be able to understand and obey the law made to govern him, and he must likewise be able to make the law.

I hold it as a great point in self-education that the student should be continually engaged in forming exact ideas, and in expressing them clearly by language. Such practice insensibly opposes any tendency to exaggeration or mistake, and increases the sense and love of truth in every part of life. Those who reflect upon how many hours and days are devoted by a lover of sweet sounds to gain a moderate facility upon a mere mechanical instrument, ought to feel the blush of shame if convicted of neglecting the beautiful living instrument wherein play all powers of the mind.—*Professor Faraday.*

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

A CLERGYMAN got into hot water lately, by asking the choir to attend a meeting, adding, "at least such of you as can sing."

"How are you, Smith?" said Jones. Jones pretended not to know him, and answered, hesitatingly, "Sir, you have the advantage of me." "Yes, I suppose so; everybody has that's got common sense."

A WOMAN applied for a place as a driver on the canal. "Can you manage mules?" asked an employer. "I should smile," she said, "I've had two husbands."

THE remains of a man have been dug out of the ruins of Pompeii, with both hands resting on his stomach. The building in which he was found is supposed to have been a cheap restaurant.

"WHAT a fine-looking man that is!" said one gentleman to another, noticing a face and form such as would attract attention anywhere. "Yes," was the reply, "he looks like an encyclopedia, but he talks like a primer."

"WILLIAM, my boy," says an economical mother to her boy, "for mercy's sake don't keep on tramping up and down the floor in that manner, you'll wear out your new boots. (He sits down.) There you go, sitting down! Now you'll wear out your new trousers! I declare, I never saw such a boy!"

A SCISSORS-GRINDER was ringing his bell, when a young man called to him, and asked: "Say, can you sharpen everything?" "Yes, everytings." "Can you sharpen my wits?" "Your vits? Vhell, I guess you haf to go und get a new handle und back-spring put in first. I must haf sometings to hang on py."

A NOBLEMAN once asked a clergyman at the bottom of the table why the goose, when there was one, was always placed next to the parson. "Really, my lord," said the clergyman, "your question is somewhat difficult to answer, and so remarkably odd, that I vow I shall never see a goose again without being reminded of your lordship."

"YAAS," exclaimed honest old Johann Kartoffelsalad, "young beebles haf got into extravagant noshuns. Ven I vas yung I rote on plain foolishness gap baper. Now my poy rites on schmall, golt-edge little schraps vot gost five times as much as a pig foolishness gap, und don't give you quarter so much room for ritin as dot good, old-fashun foolishness gap."

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

THE HEART OF THE WORLD; or, Home and Its Wide Work. By G. S. Weaver, D.D., author of "Mental Science," "Hopes and Helps for the Young," etc. 8vo. Illustrated. pp. 742. Price $4. The Elder Publishing Company, Chicago.

The author's name is a sufficient pledge to the book reviewer that this work is not an ephemeral, gossipy, summer-breeze affair. It treats on subjects with which Dr. Weaver has experience as an observer and a writer—subjects which may be said to belong to his peculiar province, the success of those mentioned in the title, besides "Aims and Aids for Young Men and Women," being evidences of his fitness to instruct the home-circle. In this new volume he comprises the results of his study and experience with reference to the office and function of the home in human life, and in his practical manner and yet always attractive style, treats of the various topics of importance which belong to this "first, greatest, and best of the institutions of civilized society." It is a book which can be urged upon the attention of people, for its reading will be likely, in every case, to produce some impressions which in the final outcome will better the manhood or womanhood of the reader. There is something in it to interest every one, whether old or young, great or small. We approve the course of the publishers in producing the volume, and shall be glad to know that it secures a wide distribution. The binding is neat and substantial, and several fine steel illustrations add their attractiveness to the text.

INQUIRIES INTO HUMAN FACULTY AND ITS DEVELOPMENT. By Francis Galton, F.R.S., author of "Hereditary Genius," etc. 8vo, pp. 380. With plates. Price $2.50. New York: Macmillan & Co.

This is another contibution to anthropological research by this industrious observer, which will interest all who give attention to the important subject of heredity, by its detail of careful work on the part of Mr. Galton. His experiments in "Sensitivity," or the relative capability of different persons to distinguish minor differences of weight tone, color, etc., and also, with animals, to determine peculiarities of organiza-

tion with reference to hearing sound in different keys, furnish new data of value in anthropometry. He shows how keenness of vision in seeing distant or small objects may exist, with inability to discriminate nicely between differences of tint; and how one may have a quick ear for sounds in general, yet lack power to detect close variations of tone. Here he recognizes the effect of culture on nervine faculty. He claims that as a rule what is generally called nervous irritability, that quality which renders some distressed by noise, sunshine, etc., is not associated with acute powers of discrimination. He finds, what will be a surprise to most of his readers, that "men have more delicate powers of discrimination than women, and the business experience of life seems to confirm this view. The tuners of piano-fortes are men, and so, I understand, are the tasters of tea and wine, the sorters of wool, and the like." May it not be suggested with regard to these occupations, that women have not had the opportunity to obtain a similar experience with men? We know that in some branches of art, for instance, the manufacture of artificial flowers, women are regarded as much more skillful than men.

He also states that the popular belief concerning the superior sensitivity of the blind is due to exaggerated claims on their part, which in his observations have not been verified.

He has found that the great majority of people are unconscious of their personal peculiarities, and do not recognize that they owe their success in this or that line of effort to "natural gifts" of exceptional capacity and energy on the one hand, and of exceptional love for their special work on the other. In this he confirms the view of the experienced phrenologist, and, like the latter, asserts "the importance of submitting our faculties to measurement."

Mr. Galton's opinions on the transmission of physical and mental characteristics, especially in relation to criminal propensity, have sustained no change since the publication of "Hereditary Genius," rather they are reiterated with emphasis, and principles enunciated with urgency which he deems essential, in an endeavor to elevate the moral standard of society and improve the physical stock of the people. Hereditary taints must be bred out before we can rise to the position of truly free members of an intelligent society. He very encouragingly (to Americans) says that "the most likely nest at the present time for self-reliant natures, is to be found in States founded and maintained by emigrants."

The general reader will be entertained by the author's analysis of types of physiognomy, which he illustrates by his composite portraits, and also by his vivid presentation of the topics "Mental Imagery," and "Number Forms," in which his treatment assumes many novel phases. Mr. Galton apparently assumes the truth of the evolution theory, and considers it the "religious duty" of man to help forward the process of improvement "for his own personal advantage," "deliberately and systematically."

SEVEN DAYS IN A PULLMAN CAR. By Auburn Towner. 12mo, pp. 260. Paper, 50 cts.; cloth, $1. New York: J. S. Ogilvie & Co.

The author makes use of the old idea so deftly applied by Chaucer, Boccaccio, and others of less famous memory, but gives it a *locus* synonymous with progress—the elegant and convenient vehicle for long journeys on the rail, so well known by the name of its most prominent manufacturer. A party of married and unmarried people make a journey across the Continent. To fill up time agreeably, a plan is arranged by which some one tells a story, after night has fallen, each day while the journey lasts. We have nine stories, somehow, for the seven evenings, besides a pleasant little love affair growing out of the trip itself. The descriptions of character are generally good, and for the most part the book is an entertaining bit of summer reading.

COMPETITIVE WORKMEN. By Faye Huntington, author of "Ripley Parsonage," etc. 16mo, pp. 272. Price $1. National Temperance Society, J. N. Stearns, Agent, New York.

A new temperance story, founded, as all such stories must be, upon old themes, but the ever-recurrent themes of temptation, degradation, sorrow, ruin, so long as strong liquor shall be promiscuously sold and promiscuously drank. This tale, however, is an exemplary one for reform, as it shows how a thriftless country town, noted for its cider-drinking and spirit manufacture, ignorance, and disregard of the Sabbath, was changed in every way for the better through the efforts of two earnest workers—one a well-educated school-teacher, the other a German lad, poor in this world's goods, but rich in his love for truth and decency.

PUBLICATIONS RECEIVED.

DIO LEWIS' MONTHLY. New York: Clarke Brothers, Publishers. pp. 128. Price $2.50 per year. This new candidate for public favor makes its first appearance for August, 1883. Of course, we welcome it most cordially, as we do everything from the pen of Dio Lewis. His genial way of uttering sober, alarming, and even unwelcome truth, makes his reader follow him as by a strange and pleasant fascination. Of course, it is not expected that a massive magazine like this will be filled by one pen, though it be facile, and, therefore, we gladly meet several other names as contributors, which are well known in progressive and reformatory literature, whose

vigorous and timely articles will be read with pleasure and profit. For thirty years or more few names have been better known as teacher, reformer, and writer, than that of our friend Dr. Lewis, and it is easy for us to say that his monthly will deserve success. Whether or not the publishers are in accord with the spirit of the editor, we can not say, but a rather incongruous advertisement which appears in their department would seem to denote the negative. That, to be sure, is "business," but we can not help thinking such an advertisement is out of place in any part of such a magazine.

LIPPINCOTT'S MAGAZINE, for August, is a good specimen of that monthly. In quality, it is fully up to the average. As a summer mélange, it is better than the average book for an afternoon's entertainment in a quiet nook by oneself. There is a sketch of river scenery in France, with fine illustrations, a moose hunt in the Ottawa valley, and a day at Lake Tahoe. There is also a thoughtful article on hydrophobia as the substantial element of the Number. J. B. Lippincott & Co., Philadelphia.

AMONG the magazines whose province is that of health, and which come to our table regularly, is the *Sanitarian* of New York. This recommends itself to the reader for its independence of opinion on matters relating to hygiene and the treatment of diseases, whether endemic, or epidemic, or sporadic. *Good Health* is another of the kind, and may be said to represent Western enterprise. It is published in connection with a well-known sanatorium in Michigan, but has for its conductor a pushing, broad-viewed man. *Herald of Health*, of New York, has long been known for its advanced opinions on diet, and is deserving of an extended circulation.

SCIENCE maintains its upward way, dealing in matters of technical research, and supplying those who are interested in scientific progress the information which they desire. It can not be expected that a single periodical covering so broad a field will be very minute, but the editor certainly should be credited with earnestness of endeavor to meet the want of a general reader, to know the result of work done in all departments of useful experiment and observation.

We are promised by Mr. King in a circular before us as we write, that the issues of this weekly for Aug. 17, Aug. 24, Aug. 31, Sept. 7, Sept. 14, will contain an elaborate report of the proceedings of this year's meeting of the American Association, which takes place in Minneapolis, Minn., beginning on Aug. 15, and ending on Aug. 23. Scientific men will be pleased to learn that they are to be thus early provided with reports of the meeting. These reports are to be made by thoroughly competent persons, and in many cases furnished or revised by the authors of different papers.

SUCCESSFUL MEN OF TO-DAY. No. 90 of the Standard Library, published by Funk & Wagnalls of New York, is founded on a series of addresses on success, which were chiefly delivered to young men by Wilbur F. Crafts. The book deals with facts in the biographical careers of such men as John Sherman, Alexander H. Stephens, Noah Davis, Neal Dow, Joseph Cook, Mark Hopkins, C. W. Elliot, and so on, they being made the text of pithy, practical remarks, the whole being designed as an aid to the young man in making his way in the world. An appendix contains replies received from prominent men in different parts of the country to questions relating to their early life, education, habits, etc. This seems, to us, the most valuable part of the book. Price 25 cts.

COLUMBIA COLLEGE has distributed a circular of information with reference to its proposed "Annex," to furnish collegiate education for women. Those of our lady friends who have aspirations toward high intellectual training in literature, history, the classics, and European languages, physics, and philosophy, may obtain the circular by addressing President F. A. B. Barnard, New York.

ALL the way from Bozeman, Montana Ter., comes a little pamphlet upon the places of recreation, the superior natural advantages, industries, and opportunities of Bozeman. It owes its being to the pen of Matt. W. Alderson, editor of the *Avant Courier*, a paper published in Bozeman. The showing is certainly very favorable for a town and neighborhood so far removed from the civilization which the Eastern people boast of. The price is 25 cts., to be had on application to the author.

BUILDING AND ARCHITECTURAL MONTHLY, published in New York, is a valuable paper for the use of builders, carpenters, architects, and the general reader who is desirous of looking into one of the most important interests of our country. Published at $1 a year.

THE POPULAR SCIENCE MONTHLY for September, as announced by its publishers, will contain among its papers the following pertinent topics: The Germ-Theory of Disease; The Chemistry of Cookery; Agricultural Experiment Stations; Insanity, by one who has been insane; The Growth of Hygienic Science; "Our Marriage and Divorce Laws."

THE NORTH AMERICAN REVIEW for August has an excellent essay on an economical question entitled "Making Bread Dear," while a *pro* and *contra* discussion of Science and Prayer will interest many readers.